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ABSTRACT

This study examines the differences in subject approaches found between two secondary services in education: Education Index and EPIC's Current Index to Journals in Education (CIJE). A sample of 30 journal articles was taken from each tool in the areas of educational psychology, school administration, and special education: after an investigation of the characteristics of the displays of thesaural descriptors in CIJE and the subject headings in Education Index, an analysis was made of the topics under which each article was indexed in both tools. The data analysis includes a quantitative description of the sample, the structure of the three areas in education as found in both the thesaurus and subject heading list, terminological characteristics, and a general summation of findings. The thesaurus and its role in the retrieval of materials utilizing educational terminology is discussed along with problems encountered in trying to index educational terms. An appendix includes data from the sample and several thesaural displays. (Author/FM)

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A COMPARATIVE STUDY OF SUBJECT APPROACHES IN

C.I.J.E. AND EDUCATION INDEX

WITH REFERENCE TO THREE AREAS IN EDUCATION

BEST COPY AVAILABLE

A Study submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Information Studies
(Social Sciences)

at

THE UNIVERSITY OF SHEFFIELD

by

CHARLES A. JULIAN

"PERMISSION TO REPRODUCE THIS
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September, 1978

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ABSTRACT

This study examines the differences in subject approaches found between two secondary services in education — Education Index produced by H. W. Wilson and Current Index to Journals in Education (C.I.J.E.) produced by the Educational Resources Information Center (ERIC). A sample of thirty journal articles was taken from each tool in three areas of education (educational psychology, school administration, and special education) totaling a complete sample of ninety journal articles. After conducting an investigation of the characteristics of the displays of thesaural descriptors in C.I.J.E. and the subject headings in Education Index, an analysis was made of the topics under which the article was indexed in both tools. The data analysis includes a quantitative description of the sample, the structure of the three areas of education as found in both the thesaurus and subject heading list, terminological characteristics, and a general summation of findings.

The thesaurus and its role in retrieval of materials utilizing educational terminology is discussed along with problems encountered in trying to index educational terms. A description of thesaural conventions follows in an effort to show how these problems may be overcome through the use of vocabulary control, hierarchical relationships, and collateral relationships.

An appendix is included with the data from the sample and several thesaural displays.

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INTRODUCTION

Any person who has conducted research in a library probably has at one time or another had occasion to use a printed index for retrieval of journal articles. Also, it is likely that at one time or another the user of a printed secondary service index has found the experience to be most frustrating as he is shuffled from one cross-reference to another. Yet, the library user is often led to believe that these secondary services are the "bibles" through which all of the answers may be found.

The purpose of this study is to determine how effective two of these indexes are -- Education Index and Current Index to Journals in Education. Ideas for the study were provoked by an article written by Alan Schorr, "Education Index and Current Index to Journals in Education: Do We Really Need Both?"¹ In his article, Schorr touches briefly upon the differences in subject approaches between Education Index and Current Index to Journals in Education. It was proposed to attempt to investigate subject approaches in a limited number of educational fields in an effort to assess the subject retrieval effectiveness of the tools.

It was decided to concentrate upon these two tools because of (a.) their importance in the educational field (b.) the coverage between the two tools is essentially the same (c.) the tools represent possibilities of studying overlap in coverage (d.) the tools both offer differing indexing philosophies..

Since 1929, Education Index has been a major retrieval tool in the field of education as a source of journal articles. Currently, the index appears monthly with various cumulations and offers sub-

ject and author indexing for 331 journals. Subscribers are billed according to the number of journals indexed the particular library receives in accordance with H. W. Wilson's Subscribing Schedule. A subject heading authority file is used in assigning index terms and extensive cross-referencing is employed although the methods of indexing are not made available to the public for their information.²

In 1967, the ERIC Clearinghouse began producing Current Index to Journals in Education to "serve the needs of the practicing educator, reference librarian, and education researcher."³ It is arranged into four sections -- main entry section, subject index, author index, and journal contents index and covers 762 journals in the field of education. Abstracts are compiled for most of the journal entries from the 762 titles which are covered. The issues are produced monthly with semi-annual and annual cumulations. All of the indexing is done by the ERIC Clearinghouses and descriptors are assigned from the Thesaurus of ERIC Descriptors. Users may subscribe to the system on magnetic tape.

An attempt was made to uncover the structural characteristics of the subject fields in each tool which might prove useful to later users of the secondary services. When found, it was hoped that these characteristics could be formulated so that manipulation of the data could indicate methods of changing search strategies to accomodate differences between the tools.

Very early in the study it became apparent that much of the comparisons would involve the effectiveness of a thesaurus versus a subject heading authority file. The two methods are similar but possess their differences also. The thesaurus is intended for use

in a post-coordinate mode as its descriptors are not designed as summations like the headings of a subject heading list. No mention is made of the obvious handicap to the British user of trying to reconcile the differences between American and British educational terminology as both tools are published in the United States.

Finally, it is noted that much more work could have been done in this area had not time been a restricting factor. Certainly comparisons between the rules of the Library of Congress Subject Headings List and the ERIC Thesaurus are noteworthy. Such a comparison could not be investigated for the subject headings were not available in the university library for inspection. Additionally, it would have proved both interesting and useful if the project could have allowed for tests of the indexes with "real" users to complement the technical method employed.

For various reasons, the work here is not conclusive; however, it does point up some of the factors that could influence use effectiveness. Additionally, it indicates one type of approach to the problem of retrieval effectiveness but will most certainly need deeper investigation.

CHAPTER 1

METHODOLOGY

1.1 Sample Characteristics

Due to the restrictions of limited time and materials, the construction of the base of samples was kept relatively simple. All of the information was recorded in-like manner on index cards, a sample of which is provided in the search procedure section. Each term searched was recorded on these cards as well as cross-references. An explanation of this card shall be undertaken later in this section. It was decided to explore three areas of concern in education -- educational psychology, school administration, and special education for several reasons. First, a wide variety of topics with various headings was needed to test the differences between the two tools. All of the three areas possess the capabilities of searching a number of different topics. It would have been of no use to compile a sample which contained identical subject headings or descriptors when variety was needed. Secondly, the three areas offered the potential of making a structural examination of terminology within the areas to determine whether or not certain deficiencies in the tools are the result of the composition of the area in question or just an omission of the indexers. Finally, three areas were needed which would be able to reveal the basic structure of both C.I.J.E. and Education Index. These areas had to be composed of several types of divisions and capable of showing

hierarchies and subdivisions.

The sample for each of the three areas consists of thirty articles compiled from three or four journals in that particular field. This data is provided in the Appendix for examination by the reader. Ulrich's International Periodicals Directory, Seventeenth Edition, 1977-78 (New York and London, R. R. Bowker Co., 1977) was consulted for the journals to be examined. It was necessary to find titles which were indexed both in Education Index and C.I.J.E., a factor which limited the possibilities considerably. Those titles consulted are as follows:

EDUCATIONAL PSYCHOLOGY

British Journal of Educational Psychology
Educational and Psychological Measurement
Journal of Educational Psychology

SCHOOL ORGANIZATION AND ADMINISTRATION

Educational Administration Quarterly
National Association of Secondary School Principals
Bulletin
National Elementary Principal
The Personnel and Guidance Journal

SPECIAL EDUCATION

Education and Training of the Mentally Retarded
Journal of Learning Disabilities
Teaching Exceptional Children

1.2 Search Procedure

In most cases, issues from 1974 were selected for consistency although a few back issues were consulted. It was felt that by examining materials from the same time period there would be less

chance of corrupting the sample with changed terminology within each of the fields. Because of the lag in indexing publications, it was not possible to include material of a more recent nature. An effort was made to examine as many different subject headings as possible; therefore, no attempt toward using equal numbers of articles from a particular journal title was made. In one instance, within the field of educational psychology, very few articles were chosen from one of the periodicals because of the repetitious nature of subject headings. The title, Educational and Psychological Measurement proved least useful in this subject field as most of its subject headings appeared to be identical. Thus, more articles were obtained from the remaining two titles in that field.

It was accepted without question that if a periodical title was listed in Ulrich's as dealing with EDUCATIONAL PSYCHOLOGY, SCHOOL ORGANIZATION AND ADMINISTRATION, or SPECIAL EDUCATION that all of the articles in the particular issues dealt with those areas. This could have proven to be an incorrect assumption as many education journals deal with various topics; however, the author felt that upon examining the titles accessed that there was no need to confirm whether or not each periodical article did in fact deal with the area which Ulrich's assigned to it. Thus, referring to the sample card provided below, the author in accessing the article by Acland within the subject area of educational psychology made no conscious effort to determine whether or not "Streaming in English Primary Schools" did indeed deal with educational psychology. The limited amount of time available for completing this study prevented such further analyses from being made. By virtue of the fact that it is contained in the British Journal of Educational Psychology,

it is assumed to deal with that subject.

Several stages were followed in completing a search for each journal article. Using the example provided on the sample card below we shall examine how the search strategy was conducted.

Acland, H. "Streaming in English Primary Schools," <u>British Journal of Educational Psychology</u> , 43 (2) 151-160 (June 1973)	
C.I.J.E.	EDUCATION INDEX
Educational Psychology Ability Grouping Student Grouping Social Background Academic Achievement School Surveys Tables (Data) Correlation	Psychology, Educational *Ability Grouping - Great Britain Classification - Students Grouping <u>see</u> Ability Grouping Streaming <u>see</u> Ability Grouping Ability and Achievement

First, using C.I.J.E. as a base, the Journal Contents Index was consulted in an effort to find the location of the entries for the British Journal of Educational Psychology during the month of June. From the Journal Contents Index the next step was to locate the information in the main body of entries within C.I.J.E. It was at this point that the bibliographic information was copied on the card as well as the ERIC descriptors. C.I.J.E. lists all of the descriptors in one display which enabled the searcher to conduct an investigation using C.I.J.E. as a starting base. If C.I.J.E. provided an abstract of the article it was read to provide further

information when searching Education Index.

Then, Education Index was searched for the author's name, in this case H. Acland. This step proved to be a vital component in the search strategy as Education Index generally gets articles into its service much quicker than C.I.J.E. Therefore, to be sure that one is searching the correct volume of Education Index, the entry had to be verified by author.

Using the C.I.J.E. terms as a starting point, the search was begun. In this case, EDUCATIONAL PSYCHOLOGY was searched for in Education Index. The Wilson indexers prefer the term PSYCHOLOGY, EDUCATIONAL which the searcher is directed to by a cross-reference. Not all of the cross-references are listed on each card — particularly if they are common ones such EDUCATIONAL PSYCHOLOGY see PSYCHOLOGY, EDUCATIONAL; however, it will have been listed somewhere within the sample set. If a cross-reference is not a recurring one, it will be noted on the card. All of the topics listed on the cards are terms which have material listed under them unless it is noted as a cross-reference. All of the terms on the C.I.J.E. side are valid search terms but only the first five are printed in the index. All of the terms on the Education Index side are valid terms, but only those marked with an asterisk (*) have proven to contain a reference to the particular article in question. Thus, on the sample card only one reference may be found for Acland's article under ABILITY GROUPING - GREAT BRITAIN in Education Index. Three other topics (CLASSIFICATION - STUDENTS, PSYCHOLOGY, EDUCATIONAL, and ABILITY AND ACHIEVEMENT) were searched with no success and two non-recurring cross-references were recorded (GROUPING see ABILITY GROUPING and STREAMING see ABILITY GROUPING).

An attempt was made to search on all of the ERIC descriptors to determine how many could be found in Education Index. Then, other related terms were explored as considered necessary through reading the C.I.J.E. abstract, consulting the article's title, or through the personal knowledge of the author in the field of education. Occasionally, significant differences in terminology and omissions of headings were noted on the cards.

Some doubt exists as to whether or not all of the possible entries in Education Index were found by the searcher. Every attempt was made to search under all probable topics. An examination of the data reveals that many topics were searched without success for the sake of completeness. The indexers of Education Index claim that all periodical articles have subject headings (or so stated in a correspondence with the Associate Director of Indexing Services); however, this writer found several titles to be without subject headings or at least without headings which were readily apparent. Some of these titles shall be examined in depth within the Data Analysis section of this study.

1.3 Specific Problems

Several problems manifested themselves in formulating and executing the search strategy. Some of these difficulties will be discussed in greater detail later in this paper. The first problem to be confronted was the time lag in indexing the various journal titles. It became quite frustrating to try and determine just where the article would be found and resulted in culling a huge pile of both indexes on a desk in order to have the necessary materials at hand. Secondly, C.I.J.E.'s arrangement of materials proved at times to be a bit exasperating. When the entries are cumulated

yearly into two volumes, the Journal Contents Index is not arranged chronologically but numerically. Thus, the entry below is a very typical sight:

Journal of Learning Disabilities May '74
Saccades as Related to Reading Disorder EJO71 688

Journal of Learning Disabilities Mar '74
Psychomotor Deficits Related to Perinatal Stress
EJC90 870

At first glance, such an arrangement may not seem to be so drastic, but often when the list of articles is long and the month is several entries out of its regular chronology in the index, it is difficult to find the entries needed.

Another significant problem, and one which shall be examined in much more detail later in this paper, is the differences in terminology between the two tools. Subject headings are juxtaposed, altered, and often newly created in one index or the other which makes searching most difficult.

One is aware that C.I.J.E. is based on the ERIC Thesaurus of Descriptors, but it can be quite annoying trying to use the index if the thesaurus is not close at hand. C.I.J.E. without the thesaurus is a less than fully effective tool. Likewise, the editors of Education Index give few indications of how entries are indexed to the users of the tool. The instructions should be expanded so that the indexing policies would be more apparent than they are now.

In compiling the sample set for this study it has become apparent that one could offer generalizations more concretely with a larger base from which to work. However, some suggestions may be made from a small sample such as forms the basis of this paper in

regard to obvious structural characteristics of the tools. Such suggestions are valid even though the foundation of hundreds of citations is not offered.

CHAPTER 2

DATA ANALYSIS

2.1 General Characteristics

An examination of the data collected reveals several general characteristics which shall be examined within this section. These statistics represent quantitative aspects in regard to the areas sampled.

2.11 Number of Subject Headings

A comparison of the number of subject headings/descriptors assigned per article proved to be interesting as shown in Table 1 below:

TABLE 1 - NUMBER OF SUBJECT HEADINGS/DESCRIPTORS ASSIGNED PER ARTICLE

EDUCATIONAL PSYCHOLOGY	0	1	2	3	4	5
C.I.J.E.	0	0	0	1	7	22
Educ. Index	2	5	11	8	3	1
SCHOOL ADMINISTRATION						
C.I.J.E.	0	0	0	4	6	20
Educ. Index	3	11	10	4	2	0
SPECIAL EDUCATION						
C.I.J.E.	0	0	0	2	12	16
Educ. Index	1	7	13	6	2	1

This table represents a breakdown by subject area and tool the total number of subject headings assigned per article. Thus, in examining the above table, one discovers that in the field of educational psychology C.I.J.E. assigned five thesaural descriptors to twenty-two of the journal articles found, four thesaural descriptors to seven journal articles, and three thesaural descriptors to one of the journal articles. In comparison, Education Index revealed a much more skewed display of subject headings with only one journal article being assigned five subject headings, three articles assigned four subject headings, eight articles assigned three subject headings, eleven articles assigned two subject headings, five articles assigned one subject heading, and two journal articles for which no subject headings could be found. The two articles with no subject headings were:

Bryant, Bridget and P. E. Trower "Social Difficulty in a Student Sample"

Kohn, Martin and Bernice L. Rosman "Social-Emotional, Cognitive, and Demographic Determinants of Poor School Achievement: Implications for a Strategy of Intervention"

Within the field of school administration, C.I.J.E. assigned five thesaural descriptors to twenty journal articles, four descriptors to six journal articles, and three descriptors to four journal articles while Education Index had no articles for which five subject headings were assigned, two articles with four assigned subject headings, four articles with three subject headings per article, ten articles with two subject headings, eleven articles with one subject heading, and three articles with no apparent subject headings. The three articles for which no apparent subject headings could be found were:

- Drapela, Victor J. "Counselors, Not Political Agitators"
- Eberly, Donald J. "An Action-Learning Program That Provides a Change"
- Smith, David C. "What Is Negotiable? Professional Negotiations"

In the field of special education C.I.J.E. offers sixteen articles with five assigned thesaural descriptors, twelve articles with four descriptors, and two articles with three descriptors. Education Index is represented by only one article with five assigned subject headings, two articles with four subject headings, six articles with three subject headings, thirteen articles with two subject headings, seven articles with one subject heading, and one article for which no subject headings were found. This article was:

Williams, Charlotte and Kathryn Blake "Educational Materials: Special Reading Instructional Procedures for Mentally Retarded and Learning Disabled Children; Overview of Research Program Activities"

An examination of the above figures reveals that for C.I.J.E. most of the journal articles indexed are assigned four or five thesaural descriptors. It must be stressed that this count involves only those five descriptors which appear in the printed index. Many journal articles possess more than five descriptors which may be used when accessing the system via a computer terminal. Such a generalization on the number of subject headings assigned by Education Index is a more difficult task; however, one might safely assume that the norm tends to be one or two subject headings assigned per article with a few articles possessing four or five subject headings and a few with no apparent headings. It is worthwhile noting that C.I.J.E. restricts printed entries to five per article while Education Index has no limit on the number of headings

assigned with the policy that "the article dictates the number of headings. The editor determines that the appropriate number of subject headings are assigned without resulting in redundancy."⁴ Yet, ironically as shown by these samples, the tool very seldom assigns five or more than five subject headings. No explanation is given by the editors of C.I.J.E. for their policy of restricting descriptors to only five per article other than only "the major terms are printed in the subject index."⁵ Such a restriction limits the effectiveness of the tool although for manual searching it is probably best not to compile vast quantities of terms such as FEMALE as these terms when too frequently assigned prove to be ineffectual when searching manually. However, there is no doubt that often valuable search terms may be lost for those who are manually searching C.I.J.E.

2.12 Distribution of Subject Headings/Descriptors.

Having examined the number of subject heading/descriptors assigned, it was necessary to attempt an investigation into the distribution of these items by tool and areas. The results are below in Table 2:

TABLE 2 - DISTRIBUTION OF SUBJECT HEADINGS/DESCRIPTORS FOUND

Tool	TOTAL NUMBER	EDUCATIONAL PSYCHOLOGY	SCHOOL ADMINISTRATION	SPECIAL EDUCATION
C.I.J.E.	416	142 (34%)	141 (34%)	133 (32%)
Educ. Index	183	68 (37%)	51 (28%)	64 (35%)

NOTE: Does not include C.I.J.E. descriptors which are not printed in the index

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From the preceding table, it may be deduced that although the different total number of subject headings/descriptors is quite significant between the two tools, the distribution among the subjects is fairly even. Thus, C.I.J.E. with a total of 416 descriptors contains 142 descriptors within the educational psychology sample, 141 descriptors in the school administration sample, and 133 descriptors in the special education sample. Education Index offers the smaller total subject headings of 183 with 68 headings within the educational psychology area, 51 headings in the school administration sample, and 64 subject headings dealing with special education. Within the subject areas a percentage analysis shows that for educational psychology 37 percent of the sample topics found in Education Index fell here as compared with C.I.J.E.'s 34 percent; for school administration C.I.J.E. registered the higher 34 percent figure over Education Index's 28 percent figure, and for special education Education Index devotes 35 percent of the subject headings found in the sample as opposed to C.I.J.E.'s 32 percentage of descriptors.

2.13 Exact Matches of Subject Headings and Descriptors.

When examining the entries from the samples, it was noted when a thesaural descriptor from C.I.J.E. exactly matched a subject heading from Education Index. The results are detailed in Table 3 below:

TABLE 3 - NUMBER OF TIMES PER ARTICLE C.I.J.E. DESCRIPTORS
MATCHED EXACTLY EDUCATION INDEX SUBJECT HEADINGS

Subject	0	1	2
Educational Psychology	23 (77%)	6 (20%)	1 (3%)
School Administration	25 (83%)	5 (17%)	0 (0%)
Special Education	22 (73%)	7 (23%)	1 (3%)

Within the field of educational psychology, one article possessed two terms which were used to index the article both in C.I.J.E. and Education Index, six articles had one term in common, and the remaining twenty-three articles had no search terms in common between C.I.J.E. and Education Index. The article with two common terms was:

Anderson, Norman H. "Information Integration Theory
Applied to Attitudes About U.S. Presidents"

C.I.J.E.

Attitudes
Presidents

Education Index

Attitudes - Tests and Scales
Presidents - U.S.

Although the above terms are exact matches (at least in the initial term), Education Index provides greater detail by offering further subdivisions not available in C.I.J.E. For the other six articles which had one term in common, the terms were:

Analysis of Variance
Cloze Procedure
Factor Analysis
Job Satisfaction
Sex Differences
Transfer of Training

Discussions regarding terminology and structure shall be offered later in this paper.

In the area of school administration, five articles had one search term in common and the remaining twenty-five articles had no terms in common. The five terms which coincided were:

Death
Fantasy
Open Plan Schools
Personality Tests
Role Conflict

An examination of journals dealing with special education revealed that one article possessed two common search terms, seven articles possessed one common search term, and twenty-two articles had no common search terms. The article with two common terms was:

Perry, B. Fisher "The Liberation of Johnny"

Precision Teaching
Language Development

The seven coincidental terms were:

Abacus
Boy Scouts of America
Classification
Hyperactivity
Lead Poisoning
Problem Solving
Psycholinguistics

Thus, in regard to perfect terminological matches in educational psychology it occurred in 23 percent of the sample, in school administration in 17 percent of the sample, and in special education in 26 percent of the sample. Not more than two search terms for any one article coincided and the vast majority (educational psychology - 77 percent, school administration - 83 percent, and special education - 73 percent) differed although in most cases not majorly in some terminological manner. Such results are indicators which emphasize that to effectively use the tools the user must be cognizant of the policies regarding words forms, inversions

abbreviations and other factors in compiling entries.

2.14 Totally Different Subject Headings.

Examination of the data represented in the above table posed another question in regard to the form of thesaural descriptors and subject headings encountered during this study -- how many subject headings under which the journal article could be retrieved per article in Education Index were totally different (not variant forms) from the C.I.J.E. thesaural descriptors? Thus, we have found above that the majority of the subject headings/descriptors are not exact matches, how many of them are different forms and how many are new terms? It should be stressed that this comparison was made only on the terms which provided access to the journal articles (thus not all of the Education Index terms were compared). The answer to this question lies in the data located in Table 4 below:

TABLE 4 - NUMBER OF SUBJECT HEADINGS PER ARTICLE IN EDUCATION INDEX WHICH ARE TOTALLY DIFFERENT (NOT VARIANT FORMS) FROM C.I.J.E. DESCRIPTORS

	0	1	2
Educational Psychology	15 (50%)	13 (43%)	2 (7%)
School Administration	21 (70%)	5 (17%)	4 (13%)
Special Education	16 (53%)	11 (37%)	3 (10%)

It is apparent from the above table that at least half of the differences may be attributed to variant forms of terminology while

the other half represents new or different terms. Thus, in the above table, 50 percent of the sampled articles in educational psychology possess variant forms between the terms used to find the article's title in Education Index and C.I.J.E.; 70 percent of the school administration sample is justified by variant terms; and 53 percent of the special education sample consists of variant form headings. The remaining percentages represent total differences in terminology which shall be examined later in this paper. It must be noted that a comparison was not made between those terms found in Education Index which were examined but not found to contain a reference to the journal article in question. The above figures represent only the headings for which a reference was produced.

2.15 Subject Headings Used for Access Which C.I.J.E. Considers Low Priority.

While conducting the data analysis, it appeared that frequently Education Index used a variant or exact form of a C.I.J.E. thesaural descriptor which was not printed in the C.I.J.E. index (thus indicating a lower priority for manual searching). Again, the items being compared are done on an individual article basis comparing only the C.I.J.E. descriptors and those terms under which the journal article was indexed. The extent to which this was found is shown in Table 5 below:

TABLE 5 - NUMBER OF TIMES PER ARTICLE EDUCATION INDEX INDEXES
UNDER AN EXACT OR VARIANT FORM OF A DESCRIPTOR WHICH
IS NOT PRINTED IN THE C.I.J.E. INDEX BUT LISTED

	0	1	2
Educational Psychology	26 (87%)	2 (7%)	2 (7%)
School Administration	25 (83%)	3 (10%)	2 (7%)
Special Education	20 (67%)	9 (30%)	1 (3%)

Thus, within the educational psychology sample of thirty articles 87 percent of the articles indexed by Education Index were not accessed under topics considered to be low priority by C.I.J.E. For school administration the percentage was 83 percent and for special education a lower percentage of 67 percent was realized. The remaining figures represent articles which were indexed by Education Index under topics considered to be of low importance by C.I.J.E. indexers. Such discrepancies may be explained as a phenomenon of terminological differences or varying philosophies in regard to structure of the subject area.

2.2 Subject Structures and Relationships.

During the course of data analyzation, it became apparent that reasons would need to be offered in order to explain the differences in subject heading/descriptor usage by both services. For this purpose, it was decided to compile structural charts showing the make-up of each subject area sample both in C.I.J.E.

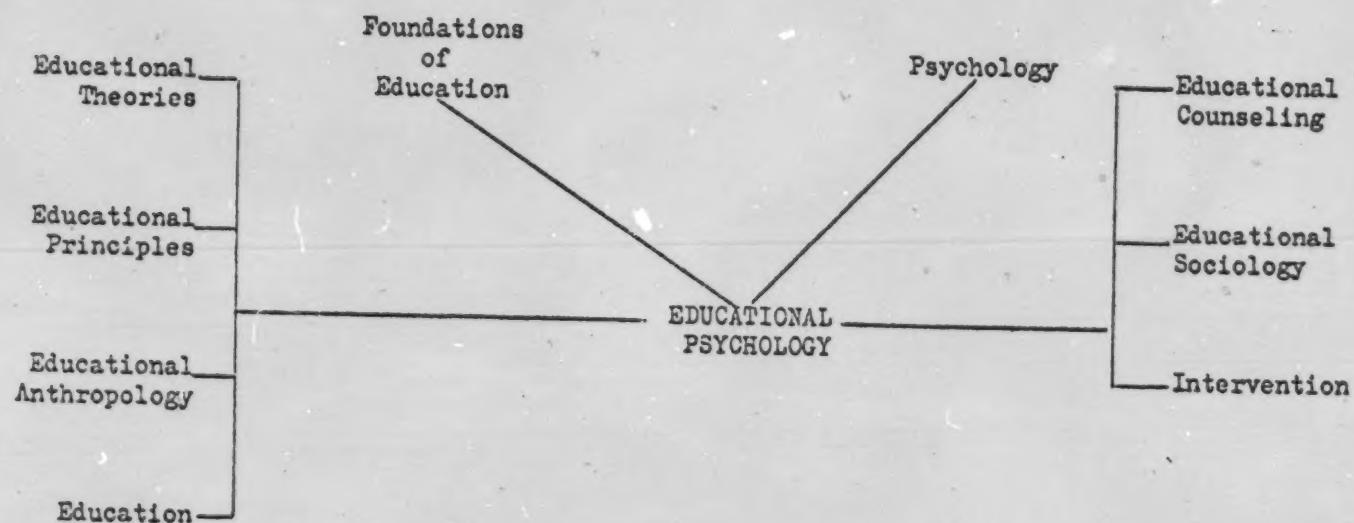
and Education Index. These charts provide a visual analysis of compilations of thesaural entries and subject headings for each area that was examined. A sample of the data used in compiling the charts is provided in Appendix 2 for detailed examination. The inclusion of the entire data set would have made this paper unwieldy and redundant as the basic information is detailed in the structural charts. It is the purpose of this section of the paper to compare and contrast the charts for each of the three subject areas.

2.21 Educational Psychology.

Figure 1.1 (overleaf) shows the structure found within the ERIC Thesaurus of Descriptors for educational psychology.

EDUCATIONAL PSYCHOLOGY is a narrower term of FOUNDATIONS OF EDUCATION and PSYCHOLOGY. Related terms are EDUCATIONAL THEORIES, EDUCATIONAL PRINCIPLES, EDUCATIONAL ANTHROPOLOGY, EDUCATIONAL SOCIOLOGY, INTERVENTION, and EDUCATION. The term EDUCATION is the only related term which may be further broken down into various narrower terms such as ACADEMIC EDUCATION, ADULT EDUCATION, etc.

Figure 1.2 (overleaf) details the structure of educational psychology for Education Index. Note that no broad terms exist -- a common difference between a thesaurus and subject heading list. PSYCHOLOGY, EDUCATIONAL and LEARNING, PSYCHOLOGY OF are represented as related terms in Education Index; however, a major difference is that both of these terms have substantial narrower terms or subdivisions. Within the entry LEARNING, PSYCHOLOGY OF, one is further directed to related topics from many of the subdivisions, e.g. SOCIAL LEARNING see also BEHAVIOR MODIFICATION. PSYCHOLOGY,



Academic Education	Consumer Education	Family Life Education	Open Education	Service Education
Adult Education	Continuation Educ.	General Education	Outdoor Education	Special Education
Aerospace Education	Correctional Educ.	Health Education	Performance Based Education	Study Abroad
Aesthetic Education	Correspondence Study	Humanistic Education	Physical Education	Supplementary Educ.
After School Education	Cultural Education	Industrial Education	Population Education	Universal Education
Alcohol Education	Driver Education	Intergroup Education	Post Secondary Educ.	Urban Education
Art Education	Drug Education	International Educ.	Process Education	Vocational Education
Bilingual Education	Early Childhood Educ.	Library Education	Progressive Educ.	Womens Education
Career Education	Economic Education	Literacy Education	Public Affairs Educ.	
Coeducation	Elementary Secondary Education	Migrant Education	Public Education	
Community Education	English Education	Music Education	Religious Educ.	
Comparative Education	Environmental Educ.	Negro Education	Rural Education	
Compensatory Educ.	Equal Education	Nondiscriminatory Education	Safety Education	
Computer Science Education	Extension Education	Nonformal Education	Science Education	

PSYCHOLOGY,
EDUCATIONAL

LEARNING,
PSYCHOLOGY OF

ACHIEVEMENT MOTIVATION

Achievements, Student
Curriculum
Evaluation
Methodology
Prognosis of Success
Teaching
Evaluation
Colleges & Univ.
Teaching Aids and
Devices
Teaching Methods

Conceptual Learning
Research
Degrees of Learning
Discovery Learning
Discrimination
Learning
Distribution of
Learning
Emotional Aspects
Feedback Learning
Research
Incidental Learning
Research
Intentional Learning
Research
Motor Learning
See Also
Motor Skills
Neurophysiological
Disorders
Nonverbal Learning
Research
Observational Learning
See Also Learning,
Psychology of -
Social Learning
Paired Associates
Learning
Perceptual Learning
Research
Probability Learning
Research

Rote Learning
Sequential Learning
Research
Serial Learning
Social Learning
See Also - Behavior
Modification
Imitation
Socialization
Team Learning
Trial and Error
Learning
See Also Guessing
Unintentional Learning
See Also Advance
Organizers
Learning,
Psychology of -
Incidental
Learning
Verbal Learning
See Also Advance
Organizers
Learning,
Psychology of -
Paired Assoc.
Learning
Whole and Part
Learning

ATTENTION
CHAINING
COMPREHENSION
CONDITIONED RESPONSES
DEVELOPMENTAL TASKS
GIVING AND FOLLOWING
DIRECTIONS
INTELLIGENCE
INTERFERENCE
INTERRUPTED ACTIVITY
MEMORY
NONSENSE SYLLABLES
PRACTICE (SOCIOLOGY)
RECALL (SOCIOLOGY)
REINFORCEMENT
REPETITION
RETENTION (PSYCHOLOGY)
STIMULUS AND RESPONSE
STUDY
TRACE (MEMORY)
TRANSFER OF TRAINING

Fig. 1.2 Education Index - Structure for Education Psychology

EDUCATIONAL possesses no related terms; however, for LEARNING, PSYCHOLOGY OF the list of related terms is quite significant. Of the twenty-one related terms to LEARNING, PSYCHOLOGY OF, five terms possess further subdivisions and thirteen terms refer the user to other related terms. Thus, if one were to look up INTELLIGENCE as a related term of LEARNING, PSYCHOLOGY OF one would find a reference to AGE AND INTELLIGENCE, CREATIVITY AND INTELLIGENCE, and HEREDITY OF INTELLIGENCE as related terms. INTELLIGENCE is further subdivided into NUTRITIONAL ASPECTS and RESEARCH.

Curiously, in this case Education Index clearly provides a more detailed structure of EDUCATIONAL PSYCHOLOGY than does the ERIC Thesaurus which lists no narrower terms as part of the subject. In an attempt to clarify this difference of interpretation, it was necessary to investigate precisely what educators considered educational psychology to include. According to The Encyclopedia of Education:

Controversy exists when the limits of educational psychology are called into question. It is a reasonable argument that educational psychologists seeking to understand and guide learning and teaching must have knowledge of such topics as:

- (1) the social, moral physical, and cognitive development of the child
- (2) the measurement of learning, aptitude for learning, and factors affecting learning
- (3) the social interaction among students and between students and teachers
- (4) the effect on learning of student and teacher personalities and their interaction
- (5) the motivation of students and teachers
- (6) the learning and creative processes
- (7) mental hygiene and individual and social adjustment⁶

As a further measure of what educational psychology should include, this writer examined a textbook on educational psychology (Anderson, Richard C. and Gerald W. Faust Educational Psychology: The Science of Instruction and Learning New York, Dodd, Mead, and Co., 1974) from a local education library. The table of contents is found below:

Table of Contents

Part I	The Technology of Instruction
1	Behavioral Objectives
2	Task Analysis: The Functional Analysis of Skills and Concepts
3	Entering Behavior
4	Evaluation
5	When Instruction Fails: Diagnosis and Prescription
Part II	Teaching and the Science of Learning
6	Teaching New Responses
7	Reinforcement
8	Corrective Feedback
9	Stimulus Control
10	Concepts and Principles
11	Motivation
12	Memory

Using these chapter titles as search terms, without looking further in the text, the ERIC Thesaurus was consulted in an effort to determine why the terms were not considered narrower terms of EDUCATIONAL PSYCHOLOGY. The results of the search may be examined in Appendix 3. Of the thirteen terms searched, seven of the terms possessed broader term relationships although none of these were identified as related terms or narrow terms of EDUCATIONAL PSYCHOLOGY (OBJECTIVES, JOB ANALYSIS, MEASUREMENT, IDENTIFICATION, CYBERNETICS, TEACHING and COGNITIVE PROCESSES).

Although it is usually thought that a thesaurus offers more structure than a subject heading list, in this case Education Index

appears to organize the area much better than the thesaural-based C.I.J.E. Where the thesaurus spreads out terminology, Education Index collates terms and has produced rather detailed hierarchies which are not present in C.I.J.E. A consistency of terminology is present in Education Index which cannot be found in C.I.J.E. where a very specific term such as INTERVENTION is merged with the broader terms like EDUCATIONAL PRINCIPLES and EDUCATIONAL THEORIES. Additionally, although the editors of the ERIC Thesaurus claim to produce a tool which reflects the usage of educational terminology, Education Index's flexibility in employing terms in a much more organized manner is apparent in the area of educational psychology.

2.22 School Administration.

Figure 2.1 (overleaf) details the structure for SCHOOL ADMINISTRATION within the ERIC Thesaurus. Two broader terms of SCHOOL ADMINISTRATION are EDUCATIONAL ADMINISTRATION and INSTITUTIONAL ADMINISTRATION which are both narrower terms of ADMINISTRATION. SCHOOL ADMINISTRATION may be further broken down into COLLEGE ADMINISTRATION and UNIVERSITY ADMINISTRATION both of which have no narrow terms, but give reference to several related terms. Seventeen terms are related to SCHOOL ADMINISTRATION (ADMINISTRATIVE PERSONNEL, ASSISTANT PRINCIPALS, BOARDS OF EDUCATION, CHIEF ADMINISTRATORS, CONSOLIDATED SCHOOLS, DOUBLE SESSIONS, ELEMENTARY SCHOOL SUPERVISORS, PRINCIPALS, SCHOOL LAW, SCHOOL POLICY, SCHOOLS, SCHOOL SUPERVISION, STUDENT GOVERNMENT, STUDENT RESPONSIBILITY, AND TRUSTEES) of which five terms (ADMINISTRATIVE PERSONNEL, CHIEF ADMINISTRATORS, GOVERNING BOARDS, SCHOOL POLICY, and SCHOOLS) possess further subdivisions into narrow terms. All of the seventeen terms refer the

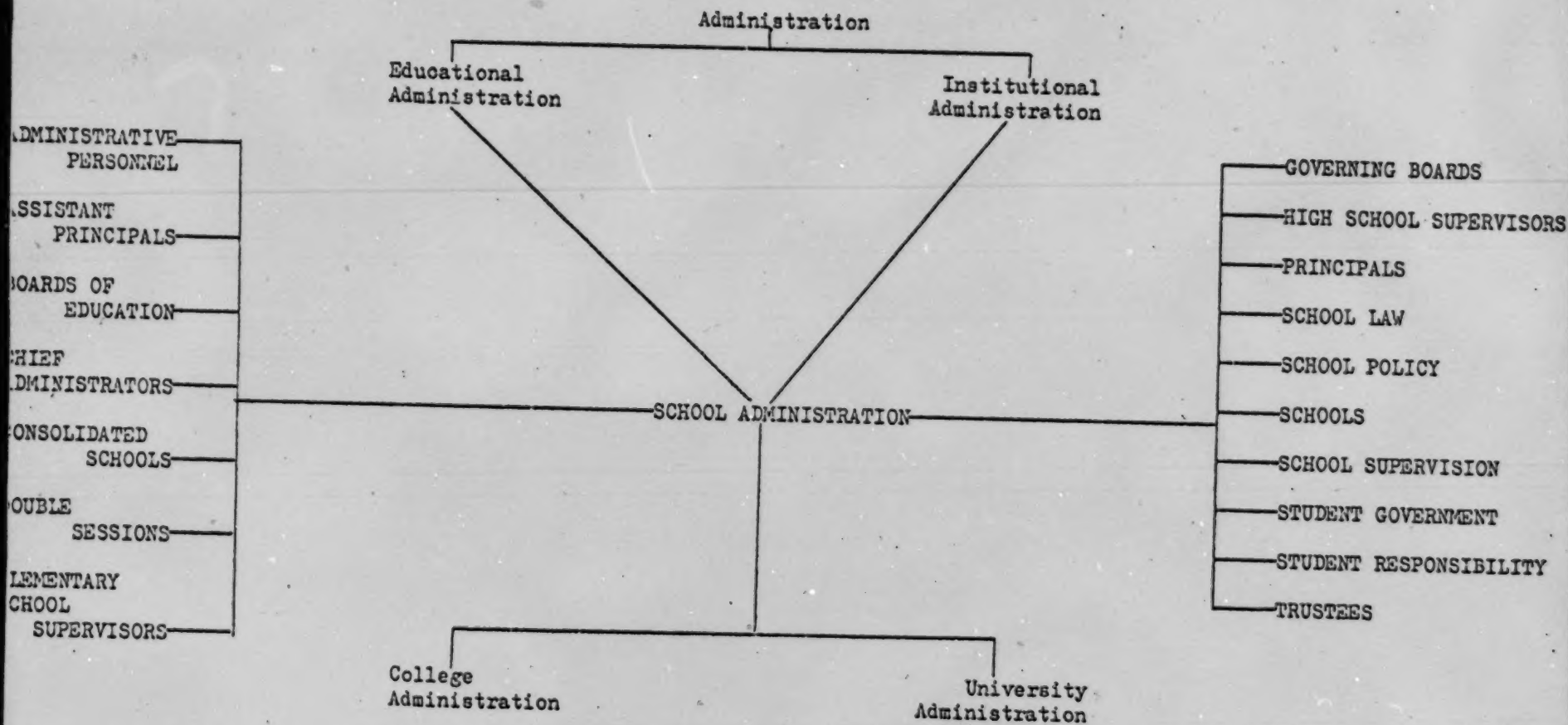


Fig. 2.1 ERIC Thesaurus - Structure for School Administration

user to other related terms.

Figure 2.2 (overleaf) represents the entries found in Education Index for SCHOOL ADMINISTRATION. In this tool, the entry is found under ADMINISTRATION OF SCHOOLS which is further divided into many subdivisions such as BIBLIOGRAPHY, RESEARCH, etc. Eleven related terms are offered by means of cross-referencing and the term ADMINISTRATION is used as a standard subdivision under types of education and school subjects.

It is interesting to note again that Education Index's subdivisions provide much more specificity than the narrower terms offered by C.I.J.E. Of the related terms, only one is common to both tools -- BOARDS OF EDUCATION. Additionally, Education Index considers the administration of colleges and universities to be a related subject while C.I.J.E. treats it as a narrow term.

2.23 Special Education.

Figure 3.1 (overleaf) from the ERIC Thesaurus shows the greatest detail found within the three areas of education in its treatment of special education. A broader term of SPECIAL EDUCATION is EDUCATION. Four narrower terms are listed as subdivisions of SPECIAL EDUCATION -- ADAPTED PHYSICAL EDUCATION, DEAF EDUCATION, EXCEPTIONAL CHILD EDUCATION, and SPEECH EDUCATION. None of these narrow terms is further subdivided but all of them offer references to related terms. Twenty-six terms are listed as related terms to SPECIAL EDUCATION. Ten of these related terms are further broken down into narrower topics and all of the entries give reference to other related subjects.

BOARDS OF EDUCATION
 BUSINESS ADMINISTRATION
 OF SCHOOLS
 COLLEGES & UNIVERSITIES
 - ADMINISTRATION
 EDUCATION - ORGANIZATION
 BY YEARS
 HOUSE PLANS
 OMBUDSMAN
 PUBLIC RELATIONS

ADMINISTRATION
 OF
 SCHOOLS

RULES AND REGULATIONS

SUPERINTENDENTS

SYSTEMS APPROACH IN
 EDUCATIONAL ADMINISTRATION

TEACHERS-ADMINISTRATION
 DISPUTES

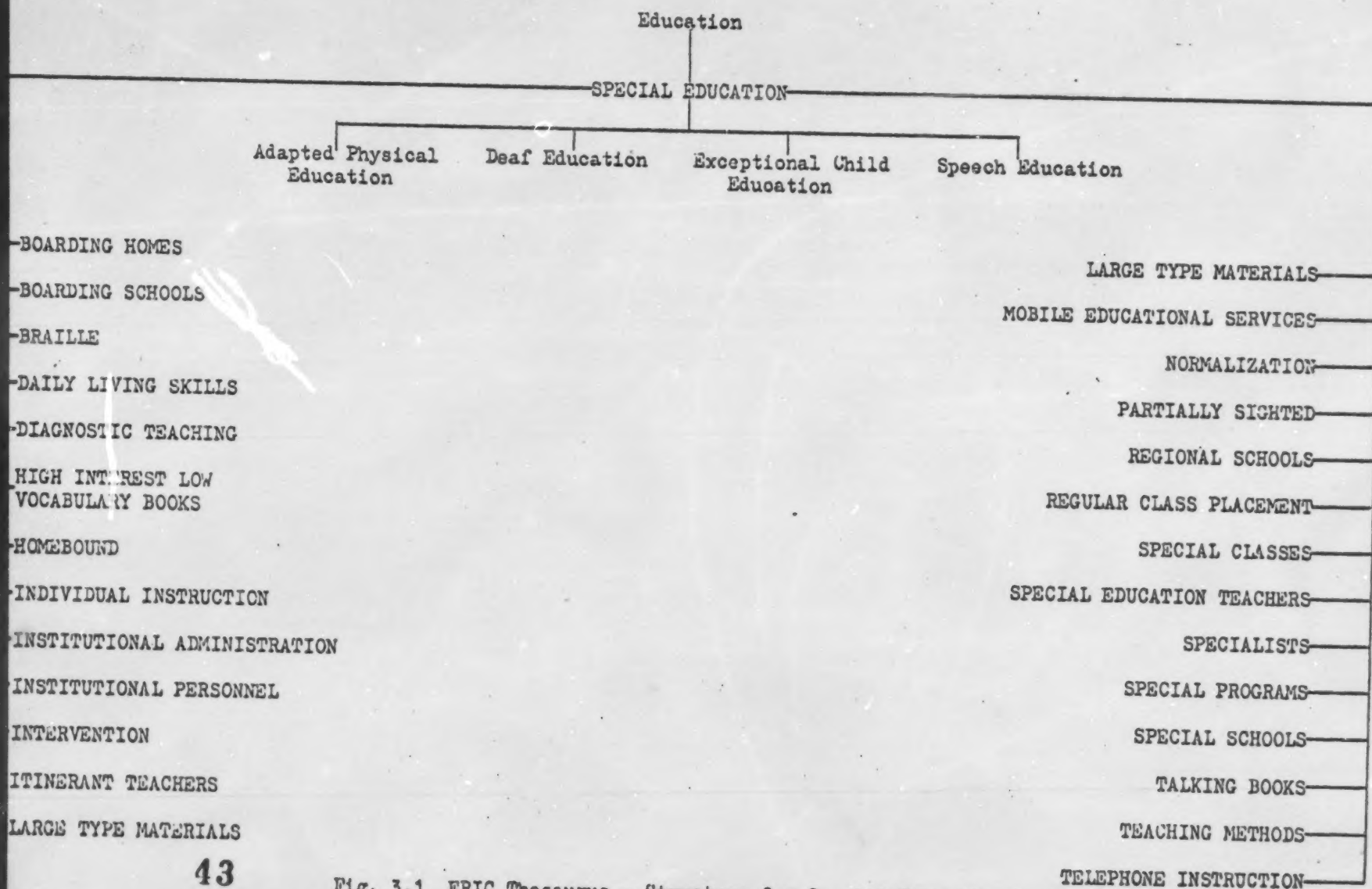
Also subhead Administration
 under type of education and
 school subject, e.g. Adult
 Education - Administration;
 Reading-Administration

Anecdotes, facetiae, satire, etc.
 Bibliography
 City
 Democractic Practices see also
 Administration of Schools -
 Personnel Practices
 Administration of Schools -
 Public Participation
 Administration of Schools -
 Student Participation
 Administration of Schools -
 Teacher Participation
 District
 Group Plan
 Parent Participation see Parent
 Participation in School

Group Plan
 Parent Participation see Parent
 Participation in School
 Activities
 Personnel Practices see also
 Principals & Teachers
 Public Participation
see also
 Citizens Committees
 Community Schools
 Parent Participation in
 School Activities
 Research
 State see also Departments of
 Education - State
 Student Participation see also
 Curriculum Development -
 Student Participation
 Student Self Government
 Teacher Participation see also
 Curriculum Development -
 Teacher Participation
 Teaching see also Internship
 in Educational Admin.
 Principals - Education
 School Administrators -
 Education
 Special Education
 Directors - Education
 Theories and Principles
 Catholic Schools see Catholic
 Schools - Administration
 Elementary Schools see also
 Continuing Teacher Plan
 High Schools
 Jewish Schools see Jewish
 Schools - Administration
 Junior High Schools
 Private Schools see Private
 Schools - Administration

Rural Schools
 Secondary Schools see
 Administration of
 Schools - High Schools
 Administration of
 Schools - Junior High
 Schools
 Australia
 (other geographic areas)

Fig. 2.2 Education Index -
 Structure for School Admin.



In contrast, Education Index (Figure 3.2 overleaf) lists eight related subjects to SPECIAL EDUCATION. Again, several of the topics listed as related terms by Education Index (CHILDREN, EXCEPTIONAL-EDUCATION and DEAF -EDUCATION) are listed as narrow terms by C.I.J.E. Such differences in philosophy must be recognized by the user of the tools. All but one of the related subjects (CHILDREN OF MIGRANT LABORERS) lists other references and all of the entries are further subdivided into narrower terms. Again, Education Index has shown a much more detailed subject structure than the ERIC Thesaurus.

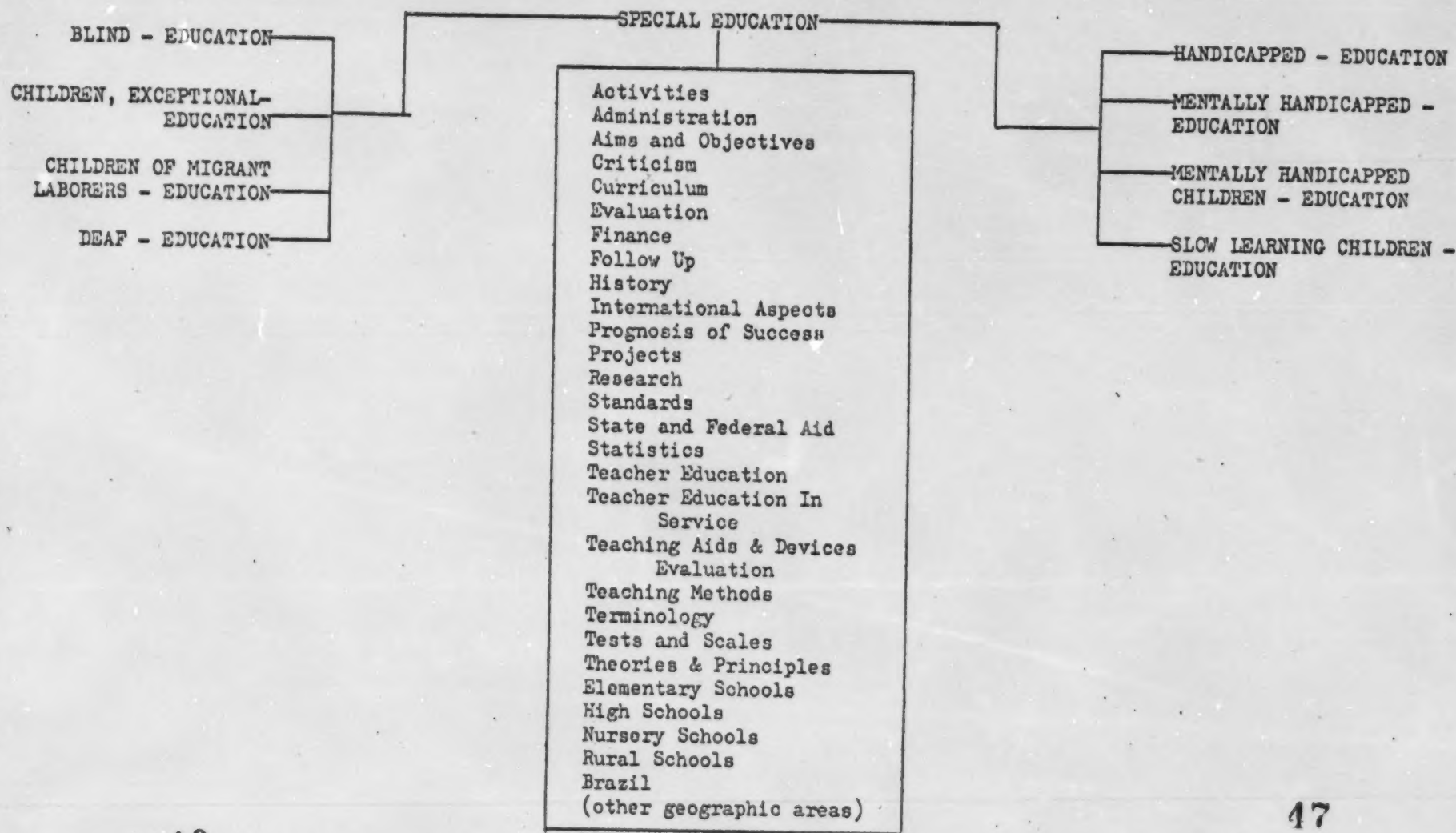


Fig. 3.2 Education Index - Structure for Special Education

2.3 Terminology.

It is the aim of this section of the paper to examine certain terminological characteristics found in bound terms, word forms, identifiers, and standard subdivisions. In addition, the terminological properties of each subject area will be examined.

2.31 General Characteristics.

It is necessary to understand the basic indexing policies of any printed secondary tool in order to utilize the work effectively. Thus, one must examine the guidelines which are used when preparing either a thesaurus or a subject heading list. Unfortunately, Education Index offers no printed description of indexing policies; however, they do state that the assigning of subject headings closely follows the practice of the Library of Congress.⁷ For the purpose of this study it was intended to examine these subject headings and to compare the heading list with the assignation of subject headings in Education Index. Unfortunately, the subject headings list was not available for consultation in the Sheffield University Library and lack of time prevented attempts to find it elsewhere. Thus, all judgements regarding the policies of Education Index are those formulated while using the tool.

Fortunately, the Office of Education's Panel on Educational Technology has issued Rules for Thesaurus Preparation which details the procedures followed by ERIC indexers.

2.311 Bound Terms.

Bound terms are those entries of a thesaurus (or subject

heading list) which involve the employment of more than one word to describe the subject. Theoretically, a one-word description is best; however, often social science, as well as other subjects, is so structured that multi-word terms may not be broken apart without destruction of the term's meaning. For example, SPECIAL EDUCATION is a bound term which when broken apart into SPECIAL and EDUCATION totally loses its conceptual identity as we know it. Both Education Index and C.I.J.E. use bound terms although occasionally Education Index tries to "soften the blow" by inverting the terms such as LEARNING, PSYCHOLOGY OF instead of PSYCHOLOGY OF LEARNING. We shall examine this in more detail in a later section of this paper. It is significant to note the rules followed by ERIC indexers when dealing with bound terms. They are:

- 1.1.1.4 Multiword descriptors (bound terms, precoordinated terms, and others) should be used whenever single-word descriptors cannot describe a concept adequately or provide effective retrieval. Many problems of this type can be solved by the careful application of rule 1.1.1.1 above. The following points should also be considered:
 - 1.1.1.4.1 Use of a multiword descriptor is justified if any of the individual words in the multiword descriptor can combine so frequently with other descriptors as to produce many false coordinations.
 - 1.1.1.4.2 Use of a multiword descriptor to represent a unique concept is justified if the individual words of that multiword term are also unique descriptors which, when coordinated with each other, represent concepts different from the one intended by the multiword term.

EXAMPLE: STUDENTS
TEACHERS
STUDENT TEACHERS

- 1.1.1.4.3 If a single-word term (used as a substantive) is so general as to be virtually useless in searching (e.g. SCHOOLS), consider the use of that term with another term (e.g. SECONDARY SCHOOLS).
- 1.1.1.4.4 Multiword descriptors, like single-word descriptors, must be carefully considered for placement in descriptor hierarchies.
- 1.1.1.4.5 Do not use inverted entries. (See section 4.0)

EXAMPLES: DEVELOPMENT, EMOTIONAL
 EDUCATION, ADULT
 are not valid descriptors;
 EMOTIONAL DEVELOPMENT
 ADULT EDUCATION
 are valid descriptors⁸

Thus, it appears that C.I.J.E. sanctions the use of bound terms when single-word terms cannot fulfill the job, if a word can be combined with so many other words that it proves to be misleading, when the terms are single-word descriptors which can signify other meanings, and if a single-word term would have such a broad connotation that its use would prove to be meaningless. A comprehension of the above rules helps the manual searcher understand which types of descriptors are employed and which are not. Unfortunately, the rules are not detailed either in the ERIC Thesaurus or C.I.J.E. for the user's attention -- they must be sought out!

2.312 Word Forms.

Just as important as knowing whether one of two words may be used as descriptors/subject headings is knowing what forms these words may take. Again, C.I.J.E. follows the very specific rulings from the U.S. Office of Education, e.g.:

1.2.3 Word Form

In choosing between singular and plural noun forms, the precedent long established by major indexing and subject cataloging operations will be followed. Generally, a useful rule of thumb may be applied as follows: use the plural form when the proposed term is a "count noun," that is, a noun about which one should ask "how many?" (e.g., devices such as TEACHING MACHINES, PROJECTORS); use the singular form for "mass nouns," that is, those about which one should ask "how much?" (e.g., DELINQUENCY); use the singular for specific processes, properties, or conditions. Common usage should be followed for term types not covered in the above general rule (e.g., use DEMOCRACY not DEMOCRACIES).

1.2.4 Numerals

Numeric elements of descriptors will be displayed as Arabic numerals and will follow the alphabetic element of the descriptor.

EXAMPLE: GRADE 4
not 4TH GRADE
or FOURTH GRADE⁹

No doubt, Education Index follows specific guidelines also, but they are not available to the user for scrutiny. It is felt that cross-references eliminate the need for lengthy instructions to the user. Unfortunately, cross-references are not always adequate. An example of this was found in the educational psychology sample. The article was:

Seth, G. "Eye-Hand Coordination and 'Handedness': A Developmental Study of Visuo-Motor Behavior in Infancy" British Journal of Educational Psychology 43 (1) 35-49 (February 1973)

In Education Index upon searching for the word HANDEDNESS one finds:

HANDEDNESS see LEFT AND RIGHT HANDEDNESS

However, no entry was to be found under the term RIGHT AND LEFT-HANDEDNESS or just RIGHT-HANDEDNESS. Such policy indicates that the indexers presuppose that one will always search for HANDEDNESS under LEFT-HANDEDNESS -- a supposition which is not necessarily true. Thus, the argument that cross-referencing prevents having to explain word forms and other indexing policies to the user does not hold credence here. In truth, it is very difficult to cover all possible terms unless one employs the type of display that a thesaurus utilizes. It is in this area that Education Index falls short of user expectations.

2.313 Identifiers.

Identifiers are present in both the ERIC Thesaurus and Education Index although the philosophy regarding such is different. In Rules for Thesaurus Preparation, identifiers are described as:

The major purpose of identifiers is to provide terms of a specialized nature in addition to the descriptors in the Thesaurus of ERIC Descriptors. Unlike descriptors, identifiers are not cross-referenced or structured. They do not appear in the Thesaurus. Some examples of identifiers: the name of a specific project (Project Head Start), geographical locations, persons, trade names, and educational or statistical tests. Identifiers refer to the subject of the indexed document.¹⁰

Using the above definition of identifiers, let us examine where such designations may be found in Education Index. Names of specific projects are dealt with as separate subject headings, e.g. READING IS FUNDAMENTAL PROJECT (commonly known as RIF -- a program of providing free reading materials for children)

would be a separate heading whereas in C.I.J.E. it would be an identifier. If it is felt that the subject is better placed under another term, a cross-reference guides the user to that place. Geographical locations are listed as both separate subject headings and as standard subdivisions. Thus, in Education Index it is possible to find a heading NEW YORK (CITY) - PUBLIC SCHOOLS and also the heading ADMINISTRATION OF SCHOOLS - NEW YORK (STATE) where in one case the heading is utilized as a subject heading in its own right while in the other case it serves as a geographical standard subdivision. Such treatment is healthier than the thesaurus which uses terms for retrieval but does not list them when they function as identifiers. However, the user, if not aware of the policy, may become confused when seeing two forms in existence for geographical headings. It should be fairly emphasized that only the more important geographical locations (e.g., New York City, Chicago, etc.) are employed as main subject headings. Trade names and educational or statistical tests again are listed as main subject headings or part of another subject heading with the appropriate cross-referencing.

2.314 Standard Subdivisions.

Standard subdivisions are peculiar to Education Index although some of the subdivisions used could qualify as identifiers within the ERIC Thesaurus. Although the user may not be aware of the policy regarding standard subdivisions there appears to be a hierarchical order in which the subdivisions appear. While conducting this study, basically three types of subdivisions were found -- subject, location, and specific geographical placename subdivisions. An example of the subject subdivision would be

BIBLIOGRAPHY, EVALUATION, RESEARCH or some other related topic, e.g., CURRICULUM - RESEARCH; TEACHING METHODS - EVALUATION. Often a subdivision may be further divided such as SPECIAL EDUCATION - TEACHING AIDS AND DEVICES - EVALUATION. Location subdivisions are those which describe a particular location or branch of the subject without employing geographical placenames, e.g., HIGH SCHOOL, FIRST GRADE, or RURAL SCHOOLS. Last in the hierarchical order comes geographical placenames. It is noteworthy to mention that nations, states, and cities are combined alphabetically. Thus, it is common to find in a list of geographical subdivisions the following:

California
Canada
Europe, Eastern
New York (city)

Note that within the location subdivisions Education Index prefers the adjectival form for numerical designations, e.g., FIRST GRADE whereas, the ERIC Thesaurus would list it as GRADE 1.

Therefore, one may assume that the general hierarchical order for standard subdivisions in Education Index is:

Subject Subdivision .
Location Subdivision
Specific Geographical Placename Subdivision

Within each area, all of the entries would be listed alphabetically without regard to further breakdowns.

2.32 Subject Areas.

Each of the three areas chosen as samples possessed various terminological characteristics which shall be examined in this section. Previously, it was noted that few terms used in the printed indexes were different usages as most differences could be accounted for as

variations of existing terms. These varied forms along with the different terms shall be examined.

2.321 Educational Psychology.

Within this area most of the differences may be attributed to word formations and expansions or deletions from a particular word. The list below is a display of some typical search terms and their differences:

C.I.J.E.

INFANCY
CONVERGENT THINKING
IMMIGRANTS
SLOW LEARNERS
READING ACHIEVEMENT
LECTURE
OCCUPATIONAL CHOICE
RETENTION STUDIES
QUESTIONING TECHNIQUES
ANXIETY
ATTITUDE TESTS
READING COMPREHENSION
LEARNING PROCESSES
CHANGING ATTITUDES

Education Index

INFANTS - GROWTH AND DEVELOPMENT
THOUGHT AND THINKING
IMMIGRANTS IN GREAT BRITAIN
SLOW LEARNING CHILDREN - GREAT BRITAIN
READING - ACHIEVEMENTS, STUDENT
LECTURE METHOD
OCCUPATION, CHOICE OF
RETENTION (PSYCHOLOGY)
QUESTIONS AND ANSWERS
ANXIETY SCALES
ATTITUDES - TESTS AND SCALES
COMPREHENSION IN READING
LEARNING, PSYCHOLOGY OF
ATTITUDE, CHANGE OF

In the above list, there are very few terms which are drastically different. Most are in their present form due to the indexing philosophy -- of which the user usually is not cognizant. Terminologically speaking, the terms employed in both tools are very much alike, yet the differences are great enough to be disconcerting to the unsuspecting user.

From Table 4 it was previously determined that in educational psychology 43 percent of the articles sampled had at least one different term and seven percent had two different terms from those displayed in C.I.J.E. An examination of the data reveals these to be the following:

TWO DIFFERENT TERMS:

Frederiksen, Janet D. and William D. Rohwer "Elaborative Prompt Effects in Children's Paired-Associative Learning: Design and Population Comparisons" Journal of Educational Psychology 66 (1) 83-89 (February 1974)

C.I.J.E.Education Index

No comparable term
PROMPTING

LEARNING, PSYCHOLOGY OF
CUES (PSYCHOLOGY)

Ross, Dorothea M. and Sheila A. Ross "Storage and Utilization of Previously Formulated Mediators in Educable Mentally Retarded Children" Journal of Educational Psychology 65 (2) 205-210 (October 1973)

C.I.J.E.Education Index

MENTAL RETARDATION
PAIRED ASSOCIATE LEARNING

MENTALLY HANDICAPPED - PSYCHOLOGY
LEARNING, PSYCHOLOGY OF - PAIRED
ASSOCIATE LEARNING

ONE DIFFERENT TERM:C.I.J.E.Education Index

ACADEMIC APTITUDE
READING ACHIEVEMENT
LEARNING PROCESSES
TEACHER CHARACTERISTICS
DISADVANTAGED YOUTH
No comparable term
AROUSAL PATTERNS
No comparable term

EYE HAND COORDINATION
MENTAL HEALTH
RESPONSE MODE

SELF CONCEPT
GOODNESS OF FIT

ABILITY AND ACHIEVEMENT
ABILITY AND ACHIEVEMENT
COGNITION
COLLEGE PROFESSORS AND INSTRUCTORS
CULTURALLY DEPRIVED CHILDREN
CURIOSITY
CURIOSITY
LEARNING, PSYCHOLOGY OF -
CONCEPTUAL LEARNING
LEFT AND RIGHT HANDEDNESS
MENTAL ILLNESS
PROGRAMS, AUTO-INSTRUCTIONAL -
CONSTRUCTION
SELF ACCEPTANCE
STATISTICAL METHODS

A perusal of the two lists above proves most alarmingly that one cannot easily predict the term which will be assigned to a particular indexing concept without reliance on thesaural displays and extensive cross-referencing techniques. In some cases where no equivalent term

was found in C.I.J.E. what is one to think?

2.322 School Administration.

From Table 4 it was noted that the area of school administration had the greatest number of variant headings (not different terms) at 70 percent of the sample taken. A sample of some of these headings follows below:

C.I.J.E.

OCCUPATIONAL GUIDANCE
TEST CONSTRUCTION
CORRECTIONAL EDUCATION
DORMITORIES
BEHAVIOR CHANGE
EDUCATIONAL CHANGE
POCKET CALCULATORS
EDUCATIONAL RESEARCH
STUDY FACILITIES
TEACHER ATTITUDES

Education Index

OCCUPATION, CHOICE OF
TESTS AND SCALES - CONSTRUCTION
PRISON SCHOOLS
DORMITORIES - ADMINISTRATION
BEHAVIOR MODIFICATION
CHANGE
CALCULATING MACHINES
RESEARCH, EDUCATIONAL
STUDY HALLS - HIGH SCHOOLS
ATTITUDES - COLLEGE PROFESSORS
AND INSTRUCTORS

As shown before, the differences between the two lists are not really drastic, but could prove to be annoying to the user. In some cases additional qualifiers have been added, e.g., DORMITORIES and DORMITORIES - ADMINISTRATION, while in other cases different words are used to describe the concept, e.g., CORRECTIONAL EDUCATION and PRISON SCHOOLS. Finally, the inevitable juxtapositioning of word forms (EDUCATIONAL RESEARCH and RESEARCH, EDUCATIONAL) is found as an indication of differing indexing policies.

Although the area of school administration contained the greatest number of terms which differed in varying forms, it also reflected the highest number of articles which possessed two terms per article found in Education Index which were totally different from their counterparts in C.I.J.E. Thirteen percent of the sample (four articles) taken possessed this characteristic while

seventeen percent of the sample (five articles) showed that one term was different. The terms and their C.I.J.E. counterparts are listed below:

TWO DIFFERENT TERMS:

C.I.J.E.

NEWS MEDIA
PUBLIC RELATIONS

ARCHITECTS
OCCUPATIONAL GUIDANCE

COURT LITIGATION
DUE PROCESS

MERIT RATING PROGRAMS
MERIT PAY

Education Index

NEWSPAPERS - EDUCATIONAL NEWS
RADIO IN SCHOOL PUBLICITY

ARCHITECTURE AS A PROFESSION
OCCUPATIONAL INFORMATION

ACTIONS AND DEFENSES
U.S. - CONSTITUTION - AMENDMENTS

TEACHERS - RATING
TEACHERS - SALARIES

Some of these terms may appear to be variations, yet they connote different meanings. For example, OCCUPATIONAL GUIDANCE is a process, whereas OCCUPATIONAL INFORMATION is a product of that process -- two terms with different meanings which have been equated as the same semantically.

ONE DIFFERENT TERM:

C.I.J.E.

DECENTRALIZATION

ADMINISTRATOR ROLE
NATIONAL ORGANIZATIONS

No comparable term
EDUCATIONAL ADMINISTRATION

Education Index

ADMINISTRATION OF SCHOOLS - NEW
YORK (STATE)
HEADS OF DEPARTMENT
U.S. - NATIONAL INSTITUTE OF
EDUCATION
U.S. - OFFICE OF EDUCATION
UNIVERSITY COUNCIL FOR EDUCATIONAL
ADMINISTRATION

The differences shown in the terms above are quite significant although in most cases descriptions are representations of the same concept. Without adequate cross-referencing and the thesaural displays, it would be impossible to find some of the concepts indexed

2.323 Special Education.

Special education is a field with terminology which often is used very broadly. In previous examinations, it was shown that half of the sample (53 percent or 16 journal articles) chosen accounted for terminological variations while 37 percent (11 articles) had one term totally different from the C.I.J.E. descriptors and ten percent (three articles) had two different terms.

A sample of the terms which differed only in form follows:

C.I.J.E.

SELF CONCEPT
SCHOOL STORE
INSTRUCTIONAL MATERIALS
EXCEPTIONAL CHILD EDUCATION
CONCEPT FORMATION

PROGRAMMED INSTRUCTION

Education Index

SELF PERCEPTION
STORES - HIGH SCHOOL
TEACHING AIDS AND DEVICES
CHILDREN, EXCEPTIONAL - EDUCATION
LEARNING, PSYCHOLOGY OF -
CONCEPTUAL LEARNING
PROGRAMMED TEACHING - SPECIAL SCHOOLS
AND CLASSES

Again, a familiar pattern exists -- those words which are inverted, those different words with the same meanings, and those words which are represented in a different form.

Those terms which were different are as follows:

TWO DIFFERENT TERMS:

C.I.J.E.

SCREENING TESTS
No comparable term

No comparable term
EYE MOVEMENTS

MATHEMATICS
No comparable term

Education Index

READINESS FOR SCHOOL
READINESS TESTS

READING - PHYSIOLOGICAL ASPECTS
EYE FIXATION

NUMBERS
LEARNING, PSYCHOLOGY OF - VERBAL
LEARNING

ONE DIFFERENT TERM:C.I.J.E.

No comparable term
IMITATION

BEHAVIORAL OBJECTIVES
EXCEPTIONAL CHILD EDUCATION

FEDERAL GOVERNMENT
SPEECH SKILLS
LANGUAGE INSTRUCTION

No comparable term
GROUPING (INSTRUCTIONAL
PURPOSES)

No comparable term

SCIENCE ACTIVITIES

Education Index

CHILDBIRTH

LEARNING, PSYCHOLOGY OF - SOCIAL
LEARNING

TAXONOMY OF EDUCATIONAL OBJECTIVES

SPECIAL EDUCATION - TEACHING AIDS
AND DEVICES

HANDICAPPED - LAWS AND LEGISLATION

SPEECH THERAPY - CASE STUDIES

LANGUAGE DEVELOPMENT

RESPIRATION

CLASSIFICATION - STUDENTS -

SPECIAL SCHOOLS AND CLASSES

CONDITIONED RESPONSES - EMOTIONAL
RESPONSES

MARINE BIOLOGY - TEACHING -

SPECIAL SCHOOLS AND CLASSES

The differences between the terms in this area are quite significant as they bear little relationship to each other conceptually at an equal level. Most of the C.I.J.E. terms are much broader than those used by Education Index, e.g., SCIENCE ACTIVITIES (used by C.I.J.E.) and MARINE BIOLOGY - TEACHING - SPECIAL SCHOOLS AND CLASSES (used by Education Index). The number of Education Index subject headings which do not possess an equivalent assigned descriptor is also interesting. As usual, the user seems to get caught in the middle of the predicament.

2.4 Summation.

From the analysis of the data several points may be reiterated. First, in regard to most of the articles in the samples, the form of subject headings/descriptors differed mainly as a result of employing varying word forms. These policies tended to be either the reflection of differing indexing policies or different conceptions of how the subject area should be approached.

Secondly, the terms which proved to be totally different between the tools were either different words embodying the same meaning of the concept or totally different subject headings with no readily apparent equivalent in the opposing tool. No clues were offered as to why one tool did not place a certain subject heading or descriptor in the index as indexing policies are not that widely explained to the using public.

Thirdly, it was shown that structures and relationships are discerned differently by the two tools. An understanding of the structure can aid the user in finding the term more quickly, but again there was a conspicuous absence of clear-cut indexing policies to explain why the situation was such.

Fourthly, it was hoped when beginning this study that some pattern would manifest itself so that a strategy could be formed in conjunction with a search to make life easier for the user. Within this short investigation, and despite initial preconceptions to the contrary, it was found that one did not find it easier to work with the tool after discerning structural characteristics; but that ease in use was the result of consistent usage of the cross-referencing and thesaural displays and an understanding of the basic rules in employment by indexers of the ERIC Thesaurus. Thus, I might be able to predict that a paper on exceptional children will be found in Education Index under the topic CHILDREN, EXCEPTIONAL - EDUCATION not because I have compiled the structural charts but because I have looked up the term EXCEPTIONAL CHILDREN many times and been cross-referred to the index's preferred term. This might cause one to subscribe to the theory of indexes and thesauri that the user does not need to know the policies of the index in order

to use it effectively; however, a balance needs to be struck between these two polarities. Knowing that the ERIC Thesaurus does not employ inverted entries is quite a useful piece of information which cannot be rectified when in error through cross-references as it is the policy of the indexers not to include cross-references for inverted entry forms which are not used. Thus, more explicit instructions are needed for the user and the librarian/information scientist in order to make the best use of the tool.

Finally, in examining the data it has been shown that both the subject heading approach and the thesaurus have their strengths and weaknesses. In many respects these strengths or weaknesses may be the result of poor construction of the tool. However, it has been interesting to note that in many areas the subject heading approach is much more precise than the thesaurus, yet the thesaurus has the advantage of the display of structure in one glance. More shall be said about these points in the next section of this paper.

CHAPTER 3

THE THESAURUS AND EDUCATION

The field of education offers many problems for compilers of thesauri some of which will be examined in this section. Examples will be drawn from two prominent thesauri in education — Information Retrieval Thesaurus of Education Terms produced at Case Western Reserve University and The Unesco:IBE Education Thesaurus. Additionally, several thesaural conventions shall be examined namely vocabulary control devices, hierarchical relationships, and collateral relationships with reference to their use in both of the above thesauri.

3.1 Description of Thesauri.

Before embarking upon a discussion of problems and thesaural conventions, it is necessary to offer a brief description of the two thesauri in question. The Case Western Reserve thesaurus was developed as a result of a contract awarded to them by the U.S. Office of Education. Development of the thesaurus came about through work done by the university's Center for Documentation and Communication Research which began work in 1961 on an indexed document collection and a pilot user group.¹¹ The vocabulary of the thesaurus has been developed from textual words from this collection and is arranged in a faceted array supplemented by an alphabetical word list (NOTE: see sample pages overleaf). The thesaurus consists of seventeen main facets with various subfacets

22 THESAURUS OF EDUCATION TERMS

- | | |
|---|---|
| Facet 5 Relationship | Facet 9 Sensation |
| 5001 General terms | 9001 Sense mode |
| 5002 Symmetry | Sensations |
| Consistency | 9002 Perceptibility |
| Equilibrium | 9003 Color |
| 5003 Similarity | Light |
| Difference | 9004 Sound |
| 5004 Nearness | |
| Distance | Facet 10 Mental constructs |
| 5005 Pattern | 10001 General terms for mental constructs |
| Arrangement | Names of programmed learning programs |
| 5006 Form | 10002 Curriculum |
| Angle | Academic courses, but not by subject matter |
| Facet 6 Ability | |
| 6001 Ability | Facet 11 Data-message |
| 6002 Aptitude | 11001 Meaning |
| 6003 Skill | 11002 Message |
| 6004 Achievement | Knowledge |
| 6005 Error | 11003 Item |
| Facet 7 Affect | |
| 7001 General terms | Facet 12 Social |
| Positive emotion | 12001 General terms for cultural values and phenomena |
| Negative emotion | Socioeconomic level |
| 7002 Ego | Citizenship and nationality status |
| Self concept | 12002 Familial and marital status |
| Autism | 12003 Interpersonal relations |
| 7003 Attitude | Social climate |
| 7004 Ideology | 12004 Probation |
| 7005 Conation | Social conditions other than 12003 |
| Motivation | 12005 Religious and political affiliation |
| 7006 Habit | |
| Temperament | Facet 13 Finance |
| 7007 Awareness | 13001 General terms |
| Set | 13002 Financial aid programs |
| Experience | |
| 7008 Mental health and Mental illness | Facet 14 Educational level |
| Facet 8 Physiological | 14001 Grade placement level |
| 8001 General terms for health and illness | 14002 Academic degrees |
| Mental handicap | 14003 Graduates |
| Physical handicap | |
| 8002 General terms for human physiological measures | Facet 15 Things |
| 8003 Physiological states other than 8001 or 8002 | 15001 General terms |
| 8004 Sex and race | 15002 Visuals, primarily non-projected |
| 8005 Age | |

TEST CONSTRUCTION

DISCRIMINATION
SN *
RT 2016
DISCRIMINABILITY
DISCRIMINATING POWER
RACIAL DISCRIMINATION

DISCUSSING
USE GROUP DISCUSSION

DISEASE
RT 0001

DISLIKE
USE AVERSION

DISMISSING
SN PERMANENT DISCIPLINARY RELEASE OF
PERSONNEL
RT 2000
DISCIPLINING*

DISORIENTATION
USE CONFUSION

DISOWNING PROJECTION
RT 7002

DISPARITY
USE DIFFERENCE

DISPLAYS
USE EXHIBITS

DISPOSITION
SN *
UF PREDISPOSITION
PROPENSITY
TENDENCY
RT 7006
ATTITUDE
DRIVE(PHYSIOLOGICAL)
SET.

DISRUPTIVE BEHAVIOR
UF DISTURBANCE
MISBEHAVIOR
MISCONDUCT
BT ANTISOCIAL BEHAVIOR
RT 2024
HOSTILITY

DISSATISFACTION
USE DISCONTENT

DISSERTATIONS
RT 15026

DISSONANCE
SN SOUND DIMENSION
RT 9004

DISTANCE
SN *
RT 5004
INTERVAL*

DISTINCTNESS
USE CLARITY

DISTINGUISHABILITY
USE DISCRIMINABILITY

DISTORTION
SN SENSORY
RT 5002
PERCEPTION
SENSATION

DISTRACTIBILITY
RT 0003
ATTENTION*

DISTRIBUTED PRACTICE
BT PRACTICE
RT 2014

DISTRIBUTION
SN *
RT 3001

DISTRICTING
RT 2007
ADMINISTRATING
SCHOOL DISTRICT*

DISTURBANCE
USE DISRUPTIVE BEHAVIOR

DIVISION
SN ARITHMETICAL CALCULATION
RT 17005

DIVORCED
RT 12002
BROKEN HOME*

DOCILITY
RT 7006
RESISTIVE BEHAVIOR*

DOCTOR
USE PHYSICIAN

DOCTORAL DEGREE
RT 14002

DOCUMENTARY FILMS
RT 15004

DOGMATISM
USE AUTHORITARIANISM

DOGS
RT 15025

DOLCH LIST
RT 15026

DOMINANCE
SN OF GREATER IMPORTANCE OR PROMINENCE AS
OF STIMULI
RT 3001
ASCENDANCE
LATERALITY

DONATIONS
USE GIFTS

DORMITORY
RT 15027

DRAFTING
RT 17010

DRAMA
UF PLAY
RT 16002

DRAMATIC ARTS
RT 17011

DRAWING
SN ART
RT 17009
MECHANICAL DRAWING

DRAWINGS
UF SKETCHES
RT 15002

DRILL
USE PRACTICE

100 **THESAURUS OF EDUCATION TERMS**

FACET 2
SUB-FACET 2020

MOTOR ACTIVITY
MOVEMENT
PSYCHOMOTOR ACTIVITY

CONDITIONING EXERCISE
PHYSICAL EXERCISE

BREATH CONTROL
COORDINATION(MUSCULAR)
MOTOR CONTROL
MUSCULAR COORDINATION

ASSEMBLING
FINGERING
GRASPING
MANIPULATING
THREADING

EYE MOVEMENT
FIXATION PAUSE
OCULAR PURSUIT
OCULAR REGRESSION

JUMPING
RUNNING
THROWING

FACET 2
SUB-FACET 2021

ADJUSTMENT
ALTERATION
CHANGE
DECREASE
DEPRECIATION
DIMINISHING
EXPANSION
INCREASE
MODIFICATION
REDUCTION
SHORTENING

CORRECTION
OVERCORRECTION

AUTOMATION
SOCIAL CHANGE
TECHNOLOGICAL CHANGE

BUILDING IMPROVEMENT
IMPROVING
NEIGHBORHOOD IMPROVEMENT
REMODELING
UPGRADING
URBAN RENEWAL

GEOGRAPHICAL MOBILITY
IMMIGRATION
MIGRANCY
MIGRATION
RELOCATING

CONVALESCENCE
RECOVERY

FACET 2
SUB-FACET 2022

DEVELOPMENT
EMOTIONAL DEVELOPMENT
GROWTH
MATURATION
MENTAL DEVELOPMENT
MOTOR DEVELOPMENT
PHYSIOLOGICAL DEVELOPMENT
SOCIAL DEVELOPMENT

FACET 2
SUB-FACET 2023

ATTITUDE CHANGE
GROUP ACTIVITY
GROUP DYNAMICS
INTERACTION
INTERPLAY
MALADJUSTMENT
OBSERVED CLASSROOM BEHAVIORS
PLAYING
ROLE CHANGE
ROLE PLAYING
SOCIAL ADAPTATION
SOCIAL ADJUSTMENT
SOCIAL BEHAVIOR-
SOCIAL INTERACTION
SOCIALIZATION

ACCULTURATION
AMERICANIZATION
ASSIMILATION
CULTURAL ASSIMILATION
URBANIZATION

DATING
SOCIALIZING

COOPERATION
TEAMWORK

CLASSROOM PARTICIPATION
MEMBERSHIP
PARENT PARTICIPATION
PARTICIPATION
STUDENT PARTICIPATION
TEACHER PARTICIPATION

ADSCENTEESM
ATTENDANCE
COMPULSORY EDUCATION
COMPULSORY SCHOOL ATTENDANCE
NON ATTENDANCE
TRUANCY

COMPETITION
EMULATION
IMITATION
RIVALRY
STOLING RIVALRY

COMPLIANCE
OBEDIENCE

FACET 2
SUB-FACET 2024

AGGRESSION
ANTISOCIAL BEHAVIOR
CRIME
CRUELTY
DELINQUENCY
DISRUPTIVE BEHAVIOR
DISTURBANCE
JUVENILE DELINQUENCY
MISBEHAVIOR
MISCONDUCT
PROPERTY DAMAGE
RIOTING
VANDALISM
VIOLENCE

ARGUMENT
CIVIL DISOBEDIENCE
CONFLICT
CONTROVERSY
DISAGREEMENT
PASSIVE RESISTANCE
PROTEST
RESISTANCE
RESISTIVE BEHAVIOR
SOCIAL CONFLICT

FEDERAL COURT LITIGATION

FACET 2
SUB-FACET 2024

LITIGATION
SUPREME COURT LITIGATION

CHEATING
DECEPTION
LYING

FACET 3
SUB-FACET 3001

MEASUREMENTS

ACADEMIC STANDARDS
BUILDING STANDARDS
JOB SPECIFICATIONS
SPECIFICATIONS
STANDARDS

CLASS RANK
RANK
RANK ORDER
SCORE

MEAN(STATISTICAL)
MEDIAN
MODE
MODE(STATISTICAL)

AMOUNT
ATTRITION RATE
CITY SIZE
CLASS SIZE
COMPLETION RATE
DROPOUT RATE
ENROLLMENT SIZE
NUMBER
POPULATION SIZE
QUANTITY
SAMPLE SIZE
SCHOOL SIZE
SIZE

PERCENTAGE
RATIO
TEACHER STUDENT RATIO

CONDITION
QUALITY
STATUS

STYLE
TECHNIQUE

ASSOCIATIVE STRENGTH
DEGREE
DOMINANCE
INTENSITY
LEVEL
SIGNIFICANCE LEVEL
STIMULUS STRENGTH
STRENGTH

CASE LOAD
COURSE LOAD
LOAD
STUDY LOAD
TEACHING LOAD

COMPREHENSIVENESS
COVERAGE
LENGTH
LIMIT
SCOPE
SPAN

DISTRIBUTION
FREQUENCY DISTRIBUTION
NORMAL DISTRIBUTION

and groups of terms. The researchers at Case Western Reserve decided upon a faceted system because of its effectiveness in use of a large vocabulary within a thesaurus for the petroleum industry and because at the time two main classification schemes for education were developed as faceted schemes. The user searches for the term first in the alphabetical array, then is referred to the faceted array for more details. Researchers at Case Western Reserve stress highly that the development of the thesaurus is experimental and open to change by the users of the system. A detailed introduction offers the potential user of the thesaurus valuable instructions on usage and explanations of how the thesaurus was developed.

The Unesco:IBE Education Thesaurus was developed after the passage of Resolution 1.51 adopted by the General Conference which provided for "the development of modern documentation and information techniques by the International Bureau of Education in the field of education."¹² This thesaurus covers a much broader scope than the Case Western Reserve one in that it involves two languages — French and English and makes an attempt at offering international indexing as opposed to terms favored nationally. The thesaurus consists of seven broad groups (NOTE: see sample pages overleaf) called fields — context terms, administration and research terms, instructional terms, people, growing and learning, content, and things. Each of the fields is divided into facets and sub-facets and the general headings for these are provided. Additionally, an alphabetical array of descriptors, alphabetical array of identifiers, and faceted array of descriptors and identifiers is offered. The compilers are aware that changes may need to be made in the thesaurus and the machinery

272	SPECIFIC PROGRAMMES AND PROJECTS	380	EDUCATIONAL ENVIRONMENT
280	FIELD OF RESEARCH	381	EXTRA CURRICULAR
281	PROBLEMS	382	EXTENSION EDUCATION
282	TYPE OF RESEARCH STUDY	390	CERTIFICATION
283	RESEARCH METHODOLOGY	391	TESTING
284	DATA	392	TESTS - GENERAL
285	VARIABLES	393	EDUCATIONAL TESTS
		394	PSYCHOLOGICAL TESTS

Field 3: Teaching terms

300	EDUCATIONAL OBJECTIVES
301	SCHOOLS - BY LEVEL
302	SCHOOLS - BY ADMINISTRATION
303	SCHOOLS - BY ORGANIZING PRINCIPLE
304	SCHOOLS - SPECIAL
305	SCHOOLS - EXPERIMENTAL
306	SCHOOLS - BY CURRICULUM
307	COLLEGES
310	OTHER INSTITUTIONS
311	CENTRES
312	RESEARCH AND DEVELOPMENT CENTRES
313	CLINICS
320	INSTRUCTIONAL PROGRAMMES
321	ADULT PROGRAMMES
322	SPECIAL PROGRAMMES
330	CURRICULUM
331	CURRICULUM DEVELOPMENT
332	CURRICULUM TYPE
333	COURSES
334	SHORT COURSES
335	INDIVIDUAL STUDY
340	SCHOOL ORGANIZATION
341	GROUPING
342	GRADE ORGANIZATION
343	CLASSES
344	SCHOOL CALENDARS
350	TEACHING
351	TRAINING
352	INSTRUCTION
353	EDUCATIONAL METHODS
354	CLASSROOM TECHNIQUES
357	ACTIVITIES
360	AUDIOVISUAL INSTRUCTION
361	PROGRAMMING
370	COUNSELLING
371	COUNSELLING - SPECIFIC GROUPS
372	IDENTIFICATION
373	THERAPY
374	SPECIAL METHODS

Field 4: People

400	STAGES OF MAN
401	FAMILIES
402	DISADVANTAGED
403	HANDICAPPED
410	STUDENTS
411	SCHOOL STUDENTS
412	NON-FORMAL STUDENTS
413	COLLEGE STUDENTS
414	LANGUAGE OF STUDENTS
415	ACHIEVERS
416	ABILITY OF STUDENTS
420	TEACHERS
421	COLLEGE TEACHERS
422	ADMINISTRATORS
423	SCHOOL PERSONNEL
424	INSTRUCTIONAL STAFF
425	SUBJECT TEACHERS
426	METHOD TEACHERS
430	CONSULTANTS
431	COUNSELLORS
432	THERAPISTS
433	HEALTH PERSONNEL
440	LEADERS
441	PERSONNEL
442	COMMITTEES
443	GROUPS
450	WORKERS COLLECTIVELY
451	CLASSES OF WORKERS
452	TECHNICIANS
460	LAW AND CREER PROFESSIONS
461	ARTS AND PHYSICAL PROFESSIONS
462	SOCIAL PROFESSIONS
463	SCIENTIFIC PROFESSIONS
470	MIGRANTS
475	RELIGIOUS GROUPS

Field 5: Learning terms

500	AGE
501	SEX

LANDSCAPING - PAYSAGISME
RT: 251

LANGUAGE - LANGUAGE
RT: LANGUAGE USAGE
RT: 131
LANGUAGES

LANGUAGE ABILITY - APTITUDE LINGUISTIQUE
BT: ABILITY
RT: 520

LANGUAGE ARTS - MODES D'UTILISATION DU LANGAGE
RT: READING
SPEAKING
WRITING
RT: 620

LANGUAGE DEVELOPMENT - DEVELOPPEMENT DU LANGAGE
BT: MENTAL DEVELOPMENT
RT: 530

LANGUAGE ENRICHMENT - ENRICHISSEMENT DU LANGAGE
RT: 662

LANGUAGE HANDICAPS - HANDICAP LINGUISTIQUE
BT: HANDICAPS
RT: DYSLLEXIA
RT: 571

LANGUAGE INSTRUCTION - ENSEIGNEMENT DES LANGUES
RT: MOTHER TONGUE INSTRUCTION
SECOND LANGUAGE INSTRUCTION
RT: 662

LANGUAGE LABORATORIES - LABORATOIRE DE LANGUES
RT: 731

LANGUAGE PATTERNS - MODELE LINGUISTIQUE
RT: 621

LANGUAGE PLANNING - PLANIFICATION LINGUISTIQUE
SH: ESTABLISHMENT OF A NATIONAL LANGUAGE POLICY AND PREPARATION
FOR ITS IMPLEMENTATION
RT: 131

LANGUAGE PROFICIENCY - MAITRISE DE LA LANGUE
RT: 535

LANGUAGE PROGRAMMES - PROGRAMME D'ENSEIGN. DES LANGUES
RT: 662

LANGUAGE RESEARCH - RECHERCHE LINGUISTIQUE
RT: 200

LANGUAGE ROLE - ROLE DU LANGAGE
RT: 205

LANGUAGE SKILLS - COMPETENCES LINGUISTIQUES
BT: SKILLS
RT: 533

The Unesco: IBE Education Thesaurus

530 <CONT.>

EMOTIONAL DEVELOPMENT
 INDIVIDUAL DEVELOPMENT
 INDIVIDUAL DIFFERENCES
 INTELLECTUAL DEVELOPMENT
 LANGUAGE DEVELOPMENT
 MENTAL DEVELOPMENT
 MOTOR DEVELOPMENT
 PERSONALITY DEVELOPMENT
 PHYSICAL DEVELOPMENT

531

DEVELOPMENTAL TASKS
 IMPATURITY
 LEARNING READINESS
 MATURATION
 PERSONAL GROWTH
 READINESS
 READING READINESS
 SOCIAL MATURITY

532

ARTICULATION (SPEECH)
 CHILD LANGUAGE
 DICTION
 PRONUNCIATION
 SPEECH

533

BASIC SKILLS
 COMMUNICATION SKILLS
 JOB SKILLS
 LANGUAGE SKILLS
 MECHANICAL SKILLS
 PSYCHOMOTOR SKILLS
 SKILLS
 STUDY SKILLS
 TEACHING SKILLS

534

HANDWRITING DEVELOPMENT
 READING DEVELOPMENT
 SKILL DEVELOPMENT
 VOCABULARY DEVELOPMENT
 VOCATIONAL DEVELOPMENT

535

ACHIEVEMENT
 ATTENTION
 ATTENTION SPAN
 KNOWLEDGE LEVEL
 LANGUAGE PROFICIENCY
 PERFORMANCE
 PERFORMANCE FACTORS
 PERSISTENCE
 RETENTION
 SUCCESS FACTORS

536

ACHIEVEMENT NEED
 CHILDHOOD NEEDS
 INDIVIDUAL NEEDS
 NEED GRATIFICATION
 PSYCHOLOGICAL NEEDS
 STATUS NEED

537

CHILDRENS GAMES
 CULTURAL ACTIVITIES
 GAMES
 LEARNING ACTIVITIES
 PHYSICAL ACTIVITIES
 SPEAKING ACTIVITIES

540

AFFECTION
 AFFECTIVE BEHAVIOUR
 AGGRESSION
 ANXIETY
 EMOTIONAL PROBLEMS
 FEAR
 INSECURITY
 REJECTION
 SECURITY

541

ASPIRATION
 EDUCATIONAL INTEREST
 GOAL ORIENTATION
 INFORMATION SEEKING
 INTERESTS
 MOTIVATION
 STUDENT MOTIVATION
 VOCATIONAL INTERESTS

542

HABIT FORMATION
 LISTENING HABITS
 SMOKING
 SPEECH HABITS
 STUDY HABITS

550

CULTURAL ENVIRONMENT
 ENVIRONMENTAL INFLUENCES
 ETHNIC ORIGINS
 FAMILY ENVIRONMENT
 FAMILY INFLUENCE
 PHYSICAL ENVIRONMENT
 PRENATAL INFLUENCES
 SOCIAL ENVIRONMENT
 WORK ENVIRONMENT

for consideration of changes, additions, or deletions to the entries is set into motion each year.

3.21 Soft Terminology.

One major problem for compilers of thesauri, and indeed a problem for any social science documentalist, is the "soft terminology" found within the field of education. Many terms cannot be as precise as perhaps a term from the pure sciences. For example, the term MOTOR CONTROL. In the Case Western Reserve thesaurus, the user is advised to use a more specific term if possible (indicated by a scope note with an asterisk). The group of related terms includes MOTOR ACTIVITY, PSYCHOMOTOR ACTIVITY, MUSCULAR COORDINATION, JUMPING and other terms. From that short list one can see that the term could involve physiology, psychology, physical education, or other areas. The Unesco:IBE Thesaurus treats the term MOTOR CONTROL much more broadly than Case Western Reserve. There is no term for MOTOR CONTROL; the closest one can come to it is MOTOR DEVELOPMENT or MOTOR REACTIONS. Both terms are narrower terms of a broader relationship and the related terms are significantly broader than Case Western's. MOTOR DEVELOPMENT relates the area to other types of development (EMOTIONAL, INTELLECTUAL, PHYSICAL, etc.) while MOTOR REACTIONS is related to terms such as CONDITIONED RESPONSE, REACTION TIME, RECALL (PSYCHOLOGICAL), REWARDS, etc. Most certainly, there are noticeable differences between the two thesauri which represent the broader difficulties of dealing with educational terminology.

EFFECTIVENESS is another term which is used frequently in educational literature; however, the precise meaning is not always known. The Case Western Reserve thesaurus places it in the Measurement Facet

and relates it to EFFICIENCY and USEFULNESS -- all somewhat ambiguous terms. The Unesco:IBE Thesaurus does not list the term EFFECTIVENESS nor does it list TEACHER EFFECTIVENESS. The closest one could come to this concept is TEACHER EVALUATION or PERSONNEL EVALUATION which most certainly does not reflect the same concept as EFFECTIVENESS. There are many other terms such as DEGREE, DOMINANCE, INTENSITY, LEVEL, STRENGTH, etc. which lend themselves to wide interpretations. The field is such that the terminology is imprecise and ever-changing which makes the implementation of an effective post-coordinate system much more difficult.

3.22 Word Meanings in Context.

Another problem which is related to the one of "soft terminology" is that many educational terms must be seen in context to determine their precise meaning. The editors of the Case Western Reserve thesaurus say:

And this is what is so characteristic of much of the terminology in education: it is more often true than not that the context of the words is needed to define the term adequately.¹³

As mentioned before, DEGREE is a term which must be seen in context as it could refer to an academic degree, a statistical measure, a geometrical term, or a score of other meanings. DEGREE in the Case Western thesaurus is asterisked which advises the user to search for a more specific term. It has been placed in the Measurement Facet and is related to ASSOCIATIVE STRENGTH, DOMINANCE, INTENSITY, LEVEL, SIGNIFICANCE LEVEL, STIMULUS STRENGTH, STRENGTH, and ACADEMIC DEGREE. ACADEMIC DEGREE is placed in the Educational

Level Facet and is related to ASSOCIATE DEGREE, BACHELORS DEGREE, DOCTORAL DEGREE, and MASTERS DEGREE. In The Unesco:IBE Thesaurus, the entry is DEGREES (TITLES) with narrower terms BACHELORS DEGREES, DOCTORAL DEGREES, MASTERS DEGREES, and SPECIALIST IN EDUCATION DEGREES. It is related to the facet which falls in Field 3: Teaching Terms - Facet 390 Certification. No attempt is made to direct the user to other meanings of the term. Countless other terms could be examined to show that the contextual meaning of a term can prove to be a problem for users of an education thesaurus.

3.3 Thesaural Conventions.

If these terminological problems are "inherited" with the subject area, then what conventions are used by thesaural compilers to overcome them? Basically, three methods are used by nearly all thesauri, these being vocabulary control (USE and USED FOR, Parenthetical Qualifiers, Scope Notes, and Identifiers), hierarchical relationships (Broader and Narrower Terms), and collateral relationships (Related Terms).

3.311 USE/USED FOR.

Vocabulary control is an important aspect of a post-coordinate system and the USE/USED FOR convention is most common. Its intention is to direct the thesaural user to a preferred term from a non-preferred one and acts as a control for synonyms which one would tend to attribute to natural language usage. The Case Western Reserve compilers detail six instances where they have used the USE/USED FOR concept. They include:

1. To show one meaning of a term

OBJECTIVES
USE GOAL

In the instance above, it is not made clear how many meanings OBJECTIVES may represent; however, in this context the user is to assume that its usage is in line with the definition of a goal. From the entry GOAL one would find USED FOR OBJECTIVES.

2. To show preference for a grammatical form

DISCIPLINE
USE DISCIPLINING

In this case, the grammatical form favored is DISCIPLINING. Again, the entry under DISCIPLINING would be USED FOR DISCIPLINE.

3. To show preference for a general term over a specific trade name

IBM CARDS
USE PUNCHED CARDS

Most thesauri will index a more general term as opposed to a specific brand name such as IBM (International Business Machines).

4. To show preference for a natural language order as opposed to an inversion

CONSTRUCTION (SCHOOL)
USE SCHOOL CONSTRUCTION

The compilers felt that SCHOOL CONSTRUCTION is a more valid search term. In the case of thesauri developed by Case Western Reserve, such a decision is based on the literature sample which was used as a foundation.

5. To show preference for one concept over another

IMAGINATION
USE CREATIVITY

In this instance, IMAGINATION and CREATIVITY are so often linked that all entries are to be placed under CREATIVITY.

6. To show preference for a general term over a more specific one

TOOLS
USE EQUIPMENT

The Unesco:IEE Thesaurus does not offer such detail to its users, but employs the same techniques although on the whole it does not appear to use as many of these conventions as the Case Western Reserve tool.

3.312 Parenthetical Qualifiers.

Another method of vocabulary control is the parenthetical qualifier. These conventions are applied whenever a thesaurus wishes to avoid ambiguity as a result of homographic terms. The Unesco: IBE Thesaurus states that it uses parenthetical qualifiers only "in a few cases."¹⁴ Parenthetical qualifiers must be used sparingly and only with "true homographs" as they could lead to the use of many inverted entries (which is almost always avoided in thesauri) or could lead to even more confusion than the term itself being qualified. Some examples include:

CHINESE (LANGUAGE)

as opposed to Chinese people

GRADE (EDUCATIONAL LEVEL)

as opposed to grade as a marking

DEPRESSION (ECONOMIC)

as opposed to mental depression

A scope note could be used in place of a parenthetical qualifier but these tend to be hidden within the entries with no other access in the thesaurus.

3.313 Scope Notes.

Earlier, it was pointed out that many educational terms can only be defined in context. One method of limiting or defining the range of a term is through the use of a scope note. Both thesauri use scope notes and The Unesco:IBE Thesaurus stresses that in its case the limitation of scope (since the tool is an international one) is more important in trying to avoid ambiguities. Again, the Case Western Reserve editors are more specific and list the conditions for usage of a scope note. These include:

1. Positive limitation of a term's scope

ENROLLMENT SIZE

SN Total number of students in a school

This limitation of scope is meant to contrast with the enrollment of a class which is better expressed by the term CLASS SIZE.

2. Negative Limitation of a term's scope

PHYSICAL HANDICAP

SN Excluding brain damage

This scope limitation instructs the user what is not included, thus one would look elsewhere and find that the entry BRAIN INJURY would cover mental handicaps caused by brain injury. It makes the distinction between mental and physical handicaps in a field where terms are often used very broadly. Both thesauri use an adaptation of the scope -- the asterisked (*) scope note which advises the user to search for a more specific term. Thus, if one found:

SPAN

SN *

it would be advisable to look elsewhere as this term could refer to attention span, eye span, memory span or other related concepts.

3.314 Identifiers.

Finally, identifiers may be used to control vocabulary. Identifiers are very much like the subject heading list's standard subdivisions and could include document types, geographical locations, chronological periods, names of specific institutions and organizations, and names of specific statistical and psychological tests. The Case Western Reserve thesaurus includes none of these terms, but makes the point that such a decision relies upon the user needs of the system. The Unesco:IBE Thesaurus recognizes identifiers as "proper nouns whose specificity does not depend on evolving concepts; they are constants rather than variables."¹⁵ Identifiers covering geographical locations, time-location, and organizations and institutions are included in the Alphabetical Array of Identifiers and in the Faceted Array of Descriptors and Identifiers in Field 8. Because of Unesco's philosophy, the identifiers are not cross-referenced or structured and the editors advise a restricted usage.

3.32 Hierarchical Relationships.

As seen previously, thesauri show structure in various areas by use of hierarchical relationships embodied in the broader/narrower term concept. Case Western Reserve describes it as "the relation existing between a class and its subclasses and ... described as a hierarchy."¹⁶ The Unesco:IBE Thesaurus advises readers that "not all relationships between concepts covered by the Thesaurus are treated to the same extent of detail. In particular, when descriptors are alphabetically close together it is assumed that the user will establish relationships of his own accord." This is an

important distinction for the thesaurus user to make between the two tools. Case Western Reserve advises users of their thesaurus that whole-part relationships are avoided in the hierarchical order as they do not reflect the genus-species theory of classification. Thus, instead of finding:

BT AIRPLANES

NT WINGS

one would find:

BT AIRPLANES

NT BOMBERS
FIGHTERS

In the second example, the narrower terms represent types of airplanes rather than a whole-part relationship.

In the thesaurus, BT-NT relationships are posted as far upward as the relationship may be carried. Thus, if one found the following entry:

BLINDNESS

BT Visual Handicap

NT Color Blindness
Functional Blindness
Night Blindness

one could further examine;

VISUAL HANDICAP

BT Physical Handicap

which would lead to:

PHYSICAL HANDICAP

So that one may take fullest advantage of the upward mobility of a thesaurus -- an advantage which cannot be had with a subject heading list. One may find hierarchies within the same facet, the same sub-

facet, or the same group within a sub-facet. The Case Western Reserve editors never assign a broader term any narrow terms unless these terms always function as a narrow term in the same sense. If other meanings may be construed from the term it is not used. For example (as stated in the thesaurus), MATHEMATICS and FOREIGN LANGUAGES are both from the subject matter facet yet are not both broader terms. The reasoning is that narrow terms to MATHEMATICS are constants while narrow terms to FOREIGN LANGUAGES such as GERMAN do not always function in that way. GERMAN may be studied as either a foreign language or a native language.

In The Unesco:IBE Thesaurus GERMAN falls in Field 6 - Content and comes in Facet 626 which details:

Arabic
Chinese
English
French
German
National Language
Russian
Spanish

Evidently, the term NATIONAL LANGUAGE could be used for studying the language as a native one although this is stretching the limitations of the terminology.

3.33 Collateral Relationships.

Another convention which is used by the thesaurus to show collateral relationships is the related term. Related terms may represent:

1. Part - whole relationships

ELEMENTARY SCHOOL
RT Grade Five
Grade Four
Grade One

When the Case Western Reserve thesaurus was published in 1967, this philosophy may have been prevalent; however, now according to the British Standards Institution the whole-part relationship is best displayed in the Broader/Narrower Term display.¹⁸

2. Near synonyms

ABILITY
RT SKILL

The above example shows more or less a cause and effect relationship and since the terms are related reciprocally they are marked .

3. Other terms closely related conceptually

VIDEOTAPING
RT VIDEOTAPE RECORDER

These terms are the most ambiguous yet show some type of relationship (here between process and equipment for the processing) and must be noted.

The above methods represent various ways of attempting to cope with educational terminology in a post-coordinate mode. Not all conventions will be the same for all thesauri as user groups change. However, they provide some guidance in trying to come to grips with a difficult area.

APPENDIX 1 - DATA COLLECTED IN THE SAMPLES AND SEARCH TERMS

All of the entries listed below are those which were used in compiling the samples for the three areas of education examined by this study. Arrangement is by subject, then alphabetical by author's surname grouped by the journal titles in which the articles appeared.

Thesaural descriptors are listed on the left-hand side of the page and those descriptors which are indented are not printed in the C.I.J.E. index. Descriptors in parentheses are identifiers which are printed in the index but not listed in the ERIC Thesaurus.

The terms which are listed on the right-hand side of the page represent subject headings which have been searched in Education Index. An asterisk (*) indicates that an entry for that particular journal article was found under that subject heading.

EDUCATIONAL PSYCHOLOGY

British Journal of Educational Psychology

Acland, H. "Streaming in English Primary Schools,"
43 (2) 151-160 (June 1973)

Educational Psychology
Ability Grouping
Student Grouping
Social Background
Academic Achievement
 School Surveys
 Tables (Data)
 Correlation

Psychology, Educational
*Ability Grouping - Great Britain
Classification - Students
Grouping see Ability Grouping
Streaming see Ability Grouping
Ability and Achievement

Bryant, Bridget and P. E. Trower "Social Difficulty in a Student Sample" 44 (1) 13-21 (February 1974)

Educational Psychology
Social Experience
Methodology
Data Analysis
Psychological Evaluation
Tables (Data)
Questionnaires
Family Structure
Social Class

Educational Psychology see
Psychology, Educational
Psychology, Educational
Experience
Social Acceptance
Social Adjustment and Development
Data Analysis
Social Measurement see Sociometry
Sociometry
Psychometrics
Social Classes
Social Status

Cherry, N. "Components of Occupational Interest," 44 (1)
22-30 (February 1974)

Educational Psychology
Occupational Choice
Scores
Family Influence
Surveys
Tables (Data)
Social Class
School Role

Psychology, Educational
*Occupation, Choice of
Occupational Interest Survey
Scores, Test see Tests and Scales -
Scores
Tests and Scales - Scores
Family Life
Family Life Education
*Surveys - Great Britain
Social Classes
Vocational Guidance

Crane, C. "Attitudes Towards Acceptance of Self and Others and Adjustment to Teaching" 44 (1) 31-36 (February 1974)

Self Concept
Attitude Tests
Educational Psychology
Job Satisfaction
Psychological Studies
Tables (Data)
Scores

Self Concept see Self Perception
Self Perception
*Self Acceptance
Attitude Tests see Attitudes -
Tests and Scales
*Attitudes - Tests and Scales
Psychology, Educational
*Job Satisfaction
Research, Educational

Reid, I. and L. Cohen "Achievement Orientation, Intellectual Achievement Responsibility and Choice Between Degree and Certificate Courses in Colleges of Education" 43 (1) 63-66 (February 1973)

Education Majors
Student Characteristics
Goal Orientation
Motivation
Achievement Need
Locus of Control
Degrees (Titles)
Student Responsibility
Data Analysis

Teacher Education
Student Achievements
Orientation
Motivation (Psychology)
Teachers Colleges
*Degrees, Academic - Great Britain
*Locus of Control Scales
Data Analysis

Seth, G. "Eye - Hand Coordination and 'Handedness': A Developmental Study of Visuo-Motor Behaviour in Infancy" 43 (1) 35-49 (February 1973)

Eye Hand Coordination
Infancy
Developmental Psychology
Neurological Organization
Object Manipulation
Stimulus Behavior
Maturation
Lateral Dominance
Tables (Data)

Coordination, Muscular
Coordination, Motor see Coordination, Muscular
*Infants - Growth and Development
Psychology, Developmental
Neurology
Maturation
Handedness see Left and Right Handedness
*Left and Right Handedness

Smithers, A. G. "Convergers and Divergers: Different Forms of Neuroticism?" 44 (3) 304-306 (November 1974)

Educational Psychology
Neurosis
Convergent Thinking
Divergent Thinking
Tables (Data)
Data Analysis

Psychology, Educational
Neuroses
Convergent Thinking see Thought and Thinking
*Thought and Thinking - Tests and Scales
Divergent Thinking see Creative Thinking; Thought and Thinking
*Creative Thinking - Tests and Scales

Watson, P. "Stability of IQ of Immigrant and Non-Immigrant Slow-Learning Pupils" 43 (1) 80-82 (February 1973)

Immigrants
Intelligence Quotient
Slow Learners
Time Factors (Learning)
Student Improvement
Performance
Factors
Data Analysis

*Immigrants in Great Britain - Education
*Intelligence Quotient - Stability
*Slow Learning Children - Great Britain

Yule, W., et al. "Over and Under-Achievement in Reading:
Distribution in the General Population" 44 (1) 1-12
(February 1974)

Educational Psychology
Reading Achievement
Underachievers
Overachievers
Methodology
Tables (Data)
Intelligence Quotient

Educational Psychology see
Psychology, Educational
Psychology, Educational
*Reading - Achievements, Student
Underachievement
Overachievement see Ability and
Achievement
*Ability and Achievement

Zillman, D and J. R. Cantor "Induction of Curiosity via Rhetorical
Questions and Its Effect on the Learning of Factual Materials"
43 (2) 172-180 (June 1973)

Educational Psychology
Lecture
Questioning Techniques
Rhetoric
Learning Motivation
Learning Processes
Recall (Psychological)
Reinforcement
Oral Communication
Analysis of Variance

Psychology, Educational
*Lecture Method
*Questions and Answers
Rhetoric
Motivation (Psychology)
*Recall (Psychology)
Reinforcement (Psychology)
Oral Communication
*Curiosity

Educational and Psychological Measurement

Montanelli, Richard G., Jr. "The Goodness of Fit of the
Maximum-Likelihood Estimation Procedure in Factor Analysis"
34 (3) 547-562 (February 1974)

Factor Analysis
Goodness of Fit
Sampling
Tests of Significance
Hypothesis Testing
Reliability

*Factor Analysis
Goodness of Fit (Statistics) see
Statistical Methods
*Statistical Methods
Sampling (Statistics)
Tests of Significance see
Significant Differences (Sta-
tistics)
Significant Differences (Statis-
tics)

Journal of Educational Psychology

Anderson, Norman H. "Information Integration Theory Applied to Attitudes About U.S. Presidents" 64 (1) 1-8 (February 1973)

Attitudes	*Attitudes - Tests and Scales
Presidents	*Presidents - U. S.
Changing Attitudes	Change of Attitude <u>see</u> Attitude,
Learning Theories	Change of
(Information Integration Theory)	*Attitude, Change of
Information Theory	Learning Theory <u>see</u> Learning,
Models	Psychology of
Data Analysis	Learning, Psychology of
	Information <u>see</u> Knowledge (Infor-
	mation)
	Knowledge (Information)

Bull, Shellagh and H. F. Dizney "Epistemic-Curiosity-Arousing Prequestions: Their Effect on Long-Term Retention" 65 (1) 45-49 (August 1973)

Retention Studies	*Retention (Psychology)
Arousal Patterns	Arousal <u>see</u> Psychology, Physio-
Response Mode	logical
Questioning Techniques	Response Mode <u>see</u> Programs, Auto-
College Students	Instructional - Construction
Tables (Data)	Programs, Auto-Instructional -
Analysis of Variance	Construction
Data Analysis	Questioning
	*Questions and Answers
	College Students
	Analysis of Variance
	Epistemology <u>see</u> Knowledge, Theory of
	Knowledge, Theory of
	*Curiosity
	Long Term Memory <u>see</u> Trace (Memory)
	Trace (Memory)

Carver, Ronald P. "Understanding Information Processing and Learning from Prose Materials" 64 (1) 76-84 (February 1973)

Reading Comprehension	Reading Comprehension <u>see</u>
Information Processing	Comprehension in Reading
Learning Processes	*Comprehension in Reading
Connected Discourse	Information Processing <u>see</u> Cognition
Cloze Procedure	*Cognition
Objective Tests	*Learning, Psychology of - Verbal
Measurement Techniques	Learning
Data Analysis	*Cloze Procedure
	Objective Tests
	Understanding <u>see</u> Comprehension

Costin, Frank and Joseph E. Grush "Personality Correlates of
Teacher-Student Behavior in the College Classroom"
65 (1) 35-44 (August 1973)

Personality Studies
Student Behavior
Teacher Behavior
Student Opinion
Teacher Characteristics
Effective Teaching
Correlation
Tables (Data)

Personality
Personality Tests
Behavior
Teachers
*Teachers and Students - Colleges
and Universities
College Students
*College Professors and Instructors-
Personality
*College Professors and Instructors-
Rating By Students
Classrooms
Classroom Interaction see
Interaction Process Analysis-
Teachers and Students
Correlation (Statistics)

Feshbach, Seymour and Howard Adelman "Remediation of Learning
Problems Among the Disadvantaged" 66 (1) 16-28
(February 1974)

Learning Difficulties
Disadvantaged Youth
Enrichment Programs
Remedial Programs
Comprehensive Programs
Middle Class
Educationally Disadvantaged
Individualized Programs

Disadvantaged see Culturally
Deprived Children
*Culturally Deprived Children -
Education - California
*Remedial Teaching - Evaluation
Social Classes
Middle Classes

Frederiksen, Janet D. and William D. Rohwer "Elaborative Prompt
Effects in Children's Paired-Associate Learning: Design and
Population Comparisons" 66 (1) 83-89 (February 1974)

Paired Associate Learning
Prompting
Ability
Social Differences
Grade 3
Students

Paired Associates Learning see
Learning, Psychology of -
Paired Associates Learning
*Learning, Psychology of - Paired
Associates Learning
Prompts (Psychology) see
Cues (Psychology)
*Cues (Psychology)
Ability

Herson, Phyllis F. "Biasing Effects of Diagnostic Labels and Sex of Pupil on Teachers' Views of Pupils' Mental Health" 66 (1) 117-122 (February 1974)

Clinical Diagnosis

Mental Health

Sex Differences

Teacher Attitudes

Bias

Classification

Students

Behavior Rating Scales

Diagnosis, Educational see

Educational Diagnosis

Educational Diagnosis

*Mental Illness - Classification

*Attitudes - Teachers

*Sex Differences

Mental Health see Mental Hygiene

Classification - Students

Behavior - Tests and Scales

Humphreys, Lloyd G. and Allen Fleishman "Pseudo-Orthogonal and Other Analysis of Variance Designs Involving Individual - Differences Variables" 66 (4) 462-472 (August 1972)

Analysis of Variance

Individual Differences

Factor Analysis

Research Design

Statistical Analysis

*Analysis of Variance

Individual Differences

Factor Analysis

Kohn, Martin and Bernice L. Rosman "Social-Emotional, Cognitive, and Demographic Determinants of Poor School Achievement: Implications for a Strategy of Intervention," 66 (2) 267-276 (April 1974)

Elementary School Students

Academic Achievement

Social Development

Cognitive Development

Demography

Low Achievers

Ability and Achievement

Demography see also Population

Population

Social Development see Social

Adjustment and Development

Social Adjustment and Development

see also School Children

School Children

Cognitive Development see Mental

Development

Mental Development

Emotional Development

Student Achievements

Underachievement

Culturally Deprived Children

Leherissey, Barbara L., et al. "Effects of Anxiety, Response Mode, Subject Matter Familiarity, and Program Length on Achievement in computer-Assisted Learning" 64 (3) 310-324 (June 1973)

Computer Assisted Instruction
Anxiety
Response Mode
Performance Factors
Constructed Response
Achievement
Time Factors (Learning)
Task Performance

Computer-Assisted Instruction see
Computers - Educational U.
*Computers - Educational Use
Anxiety
Anxiety Scales
Response Mode see Programs, Auto-
Instructional - Construction
*Programs, Auto-Instructional -
Construction
Performance Evaluation
Ability and Achievement
Task Performance Evaluation
Subject Matter see Curriculum
Curriculum
*Familiarity (Psychology)

McGlynn, Richard and Connie Schick "Dyadic Concept of Attainment as a Function of Interaction Format, Memory Requirements and Sex" 65 (3) 335-340 (December 1973)

Group Behavior
Discussion Experience
Problem Solving
(Dyads)
Memory
Sex Differences
Interaction

Group Behavior
Discussion
Discussion Method
Problem Solving
*Memory
*Sex Differences
Interaction, Social see Social
Interaction
Social Interaction
*Learning, Psychology of -
Conceptual Learning
*Cooperation
*Competition

Marholin, David, et al. "Effect of Two Free-Time Performance Procedures on Academic Performance in a Class of Behavior Problem Children" 66 (6) 872-879 (December 1974)

Reinforcement
Behavior Change
Emotionally Disturbed Children
Behavior Problems
Academic Achievement
(Free Time)
Elementary Secondary Education
Institutionalized (Persons)
Special Education

*Reinforcement (Psychology)
Behavior Modification
Problem Children
Behavior Problems in School see
Problem Children
School Children - Discipline
Problems
*Emotionally Disturbed Children -
Education

Meyers, Joel and Roy Martin "Relationships of State and Trait Anxiety to Concept-Learning Performance" 66 (1) 33-39 (February 1974)

Anxiety
Concept Formation
Task Performance
Learning

Individual Characteristics
Psychological Patterns
Cognitive Ability
Self Concept

*Anxiety Scales
Concept Formation see Learning,
Psychology of - Conceptual
Learning
*Learning, Psychology of -
Conceptual Learning
Task Performance Evaluation see
Performance Evaluation
Performance Evaluation

Richmond, Bert O. and Gerald P. Weiner "Cooperation and Competition Among Young Children As a Function of Ethnic Grouping, Grade, Sex, and Reward Condition" 64 (3) 329-334 (June 1973)

Primary Grades
Social Behavior
Age Differences
Rewards
(Cooperation, Competition)
Racial Differences
Sex Differences
Peer Relationship
Social Development

Primary Grades
Social Behavior see Social Psychology
Social Psychology
Age Differences
Reward (Psychological Experimentation)
see Motivation (Psychology)
Motivation (Psychology)
Racial Differences see Race
Differences
*Race Differences
*Sex Differences
Peer Relations see Interpersonal
Relations
Interpersonal Relations
Social Development see Social
Adjustment and Development
Social Adjustment and Development
*Cooperation
*Competition

Ross, Dorothea M. and Sheila A. Ross "Storage and Utilization of Previously Formulated Mediators in Educable Mentally Retarded Children" 65 (2) 205-210 (October 1973)

Mental Retardation
Children
Retention
Paired Associate Learning
Mediation Theory
Tables (Data)
Analysis of Covariance

*Mentally Handicapped - Psychology
Mentally Handicapped Children -
Psychology see Mentally
Handicapped - Psychology
*Retention (Psychology)
Paired Associates Learning see
Learning, Psychology of -
Paired Associates Learning
*Learning, Psychology of - Paired
Associates Learning
Educable Mentally Retarded see
Mentally Handicapped; Mentally
Handicapped Children

Salomon, Gauriel "Internalization of Filmic Schematic Operations in Interaction with Learners' Aptitudes" 66 (4) 499-511 (August 1974)

Academic Aptitude
Learning Processes
Visualization
Transfer of Training
Observational Learning
(Internalization, Israeli)
Nonverbal Communication
Films
Grade 8
Grade 9

Academic Aptitude see College Aptitude
*Ability and Achievement
Visualization
*Transfer of Training
Learning, Psychology of -
Observational Learning
Audiovisual Education
Communication, Non-Verbal
Aptitudes

Schultz, Charles B. and Michael Pomerantz "Some Problems in the Application of Achievement Motivation to Education: The Assessment of Motive to Succeed and Probability of Success" 66 (4) 559-608 (August 1974)

Motivation
Measurement Techniques
Success Factors
Failure Factors
Achievement
Grade 9
Measurement Instruments

*Achievement Motivation - Tests and Scales
Success
Prognosis of Success
Failure (Psychology)
Student Achievement

Tennyson, Robert D. and Richard C. Boutwell "Pretask Versus Within-Task Anxiety Measures in Predicting Performance on a Concept Acquisition Task" 65 (1) 88-92 (August 1973)

Academic Performance
Anxiety
Learning Characteristics
Behavioral Objectives
Predictive Measurement
Tables (Data)
Psychological Studies
Data Analysis
Educational Environment
Instructional Design

Performance Evaluation
*Anxiety Scales
Learning, Psychology of
Behavioral Objectives see
Taxonomy of Educational Objectives
Taxonomy of Educational Objectives
Psychology
Environment
Developmental Tasks
Learning, Psychology of -
Conceptual Learning

Venezky, Richard L. "Letter-Sound Generalizations of First, Second, and Third-Grade Finnish Children" 64 (3) 288-292 (June 1973)

Primary Grades
Beginning Reading
Orthographic Symbols
Acoustic Phonetics
Finnish
Socioeconomic Influences
Verbal Stimuli
Stimulus Generalization
Tables (Data)

Primary Grades
Reading
Readers
Phonetics
Finland
*Finnish Language - Pronunciation
Verbal Stimuli see Stimuli
Stimuli
Stimulus Generalization

SCHOOL ADMINISTRATION

Educational Administration Quarterly

Bresnick, David "Cyclical Renewal in a Large City School District - Decentralization and the Policy Process" 10 (2) 19-34 (Spring 1974)

Decentralization
Bureaucracy
Urban Schools
School District Autonomy
Policy Formation
(New York City)
Administrative Organization
Centralization
Educational Administration

Decentralization of Administration
see Administration of Schools
*Administration of Schools - City
*Administration of Schools - New York (state)
Bureaucracy, Educational see Colleges and Universities - Administration
Urban Schools see City Schools
City Schools
City Schools - Administration see Administration of Schools-City
*Administration of Schools - City School Districts see also Administration of Schools - Districts
Administration of Schools - Districts
Autonomy in Education
Policy, Administrative see Administration, Theory of
Administration, Theory of
Policymaking see Public Policy; Social Policy
Public Policy
Social Policy
Educational Administration see Administration of Schools
*New York (city) - Public Schools

Bruno, James E. "Linking Financial Incentives to Teacher Accountability in School Districts" 10 (3) 46-62 (Autumn 1974)

Educational Accountability
Merit Pay
Incentive Systems
Merit Rating Programs
Financial Policy
Performance Contracts
Motivation

Educational Accountability see Accountability in Education
*Accountability in Education
Merit Increases see Wage Payment Plans
Wage Payment Plans
Merit Rating see Teachers - Rating
*Teachers - Rating
*Teachers - Salaries
Incentive Pay Plans see Wage Payment Plans
Finance, School see School Finance
School Finance
Performance Contracts
Administration of Schools - District

Carroll, Archie B. "Role Conflict in Academic Organizations: An Exploratory Examination of the Department Chairman's Experience" 10 (2) 51-64 (Spring 1974)

Role Conflict
Educational Research
Administrator Role
University Administration
Work Environment
 Higher Education
 Job Satisfaction
 Decision Making
 Educational Administration

*Role Conflict
Educational Research see
 Research, Educational
Research, Educational
Colleges and Universities -
 Administration
Work Environment see Organizational
 Climate (in business and industry)
Organizational Climate
Higher Education
Job Satisfaction
Decision Making
Educational Administration see
 Administration of Schools
Administration of Schools
Department Heads see Heads of
 Department
*Heads of Department

La Morte, Michael W. "The Fourteenth Amendment: Its Significance for Public School Educators" 10 (3) 1-19 (Autumn 1974)

Court Litigation
Court Role
Educational Policy
Due Process
Equal Protection
 Civil Liberties
 School Law

Court Decisions see Actions and
 Defenses; Supreme Court of
 the U.S. - Decisions
*Actions and Defenses
Policy, Administrative see
 Administration, Theory of
Administration, Theory of
Due Process of Law
Civil Liberties see Civil Rights
Civil Rights
School Laws and Legislation see
 Educational Laws and Legis-
 lation
Educational Laws and Legislation
*Students - Civil Rights
*Teachers - Civil Rights
Fourteenth Amendment see U.S. -
 Constitution - Amendments
*U.S. - Constitution-Amendments

Shetty, Y.K. and Howard M. Carlisle "Application of Management By Objectives in a University Setting: An Exploratory Study of Faculty Reactions" 10 (2) 65-81 (Spring 1974)

University Administration
Management Systems
Teacher Attitudes
Educational Research
Management By Objectives
Higher Education
Attitudes
Systems Approach
Educational Administration

Colleges and Universities -
Administration
Management, Theory of see
Administration, Theory of
Administration, Theory of
Attitudes - Teachers
Research, Educational
Management By Objectives see
Systems Approach in Educational
Administration
*Systems Approach in Educational
Administration
Higher Education
Faculty Attitudes see Attitudes -
College Professors and
Instructors
*Attitudes - College Professors and
Instructors

Steinhoff, Carl R. and Lloyd K. Bishop "Factors Differentiating Preparation Programs in Educational Administration: UCEA Study of Student Organizational Environment" 10 (2) 35-50 (Spring 1974)

Administrator Education
Educational Programs
Organizational Climate
Educational Research
Individual Needs
Behavior
Environment
Educational Administration

*Attitudes - Graduate Students
*Organizational Climate Index
Educational Research see
Research, Educational
Research, Educational
Needs see Motivation (Psychology)
Motivation (Psychology)
Behavior
Environment
Educational Administration see
Administration of Schools
Administration of Schools
*University Council for Educational
Administration

National Association of Secondary School Principals Bulletin

Bisonette, Leah "Designing Study Halls for Adolescents" 58 (379) 15-21 (February 1974)

Adolescents
Study Facilities
Study Habits
Individual Development
Study Centers
Study Guides
Study

Adolescents see Adolescence, Youth
Youth
*Study Halls - High Schools
Study

Dettre, John R. "Conference Behavior" 58 (380) 95-106
(March 1974)

Communication (Thought Transfer)	*Communication in Education
Conferences	Conferences and Conventions,
Media Selection	Educational
Basic Skills	Media <u>see</u> Mass Media
Speech Skills	Mass Media
Observation	Speech
Communication Skills	Communication Skills <u>see</u>
	Communication - Teaching
	Communication - Teaching

Eberly, Donald J. "An Action-Learning Program That Provides a
Change" 58 (380) 30-36 (March 1974)

Educational Development	Volunteer Workers in Education
Learning Experience	Youth - Employment
Volunteers	Seattle, Washington
(Action Learning, Program	Programs
for Local Service)	
Training	
Youth Employment	

Fins, Alice "Sex and the Principal: A Long Look at Title IX"
58 (383) 53-62 (September 1974)

Principals	*Principals - Powers and Duties
Sex Discrimination	Sex Discrimination <u>see</u>
School Integration	Discrimination in Education
School Administration	*Discrimination in Education
Admission Criteria	Administration of Schools
(Title IX of the Education	Pregnant Schoolgirls
Amendments Act of 1972)	Teaching Aids and Devices
Pregnant Students	Work-Study Programs
Instructional Materials	Physical Education
Work Study Programs	*Education Amendments of 1972
Physical Education	

Rieder, Corinne "The National Institute of Education: What It
Is and What It Plans to Do" 58 (382) 37-45 (May 1974)

Educational Problems	National Institute of Education
Educational Improvement	<u>see</u> U.S.-National Institute
National Organizations	of Education
National Programs	*U.S.-National Institute of Education
Educational Research	Research, Educational
Educational Needs	Associations, Educational
Educational Objectives	
Educational Programs	

Sause, Edwin F. "Demonstrating Competency As A Principal"
58 (383) 19-28 (September 1974)

Principals
 Certification
 Educational Administration
 Administrator Qualifications
 (Certification Alternative
 Project in Administration
 and Curriculum)
 Educational Problems
 Questionnaires
 Tables (Data)

*Principals - New York (state)
 *Principals - Certification
 School Administrators-Certification
 Educational Administration see
 Administration of Schools
 Administration of Schools
 Questionnaires

Schott, James L. "The Practitioner's Guide to Research: Maturity,
 Pupils and the Middle School" 58 (381) 94-98 (April 1974)

Elementary Schools
 Middle Schools
 Maturation
 Educational Research
 Student Needs
 Sampling
 Educational Programs
 Principals
 Student Ability

Elementary Schools
 Middle Schools
 Maturation
 *Research, Educational
 Sampling (Statistics)
 Principals
 Ability and Achievement

Tyrell, Ronald W. "The Open Middle School: A Model for Change"
58 (381) 62-66 (April 1974)

Middle Schools
 Educational Change
 Adolescents
 Open Plan Schools
 Guidelines
 Decision Making
 Teaching Methods
 Curriculum Design
 Teacher Responsibility

Middle Schools
 *Open Plan Schools
 Educational Change see Change
 Change
 Adolescence
 Decision Making
 Teaching Methods
 Curriculum
 Responsibility

National Elementary Principal

Huggins, Kenneth B. "Alternatives in Values Clarification"
54 (2) 76-79 (November/December 1974)

Values
 Educational Alternatives
 Humanistic Education
 Student School Relationship
 (Values Clarification)
 Educational Philosophy
 Educational Objectives
 Student Rights
 Personal Values
 Elementary Education

*Values - Teaching
 Humanistic Education
 Teachers and Students
 Education - Aims and Objectives
 Students - Civil Rights
 Personal Values see Values
 Elementary Education

Jones, C. Dalton "Pocket Math" 53 (2) 56-57 (January/February 1974)

Educational Technology
Mathematics Instruction
Mathematics
Pocket Calculators
Mathematics Education
Elementary Schools
Productive Thinking

Educational Technology
Mathematics - Teaching
Mathematics
Pocket Calculators see Calculating
Machines
*Calculating Machines
Elementary Schools
Thinking see Thought and Thinking
Thought and Thinking

Nissen, Myra H. "City Life" 53 (5) 63-68 (July/August 1974)

Community Control
Decentralization
Educational Change
Principals
School Community Relationship
(New York City)
Elementary Schools
Leadership
Social Problems
Urban Schools

Community Control of Schools see
Administration of Schools -
Public Participation
Administration of Schools - Public
Participation
Decentralization of Administration
see Administration of Schools
*Administration of Schools - New
York (state)
Change
Principals
School-Community Relationship see
Community and School
Community and School
Elementary Schools
Leadership
Social Problems
Urban Schools see City Schools
*New York (city) - Public Schools

Smith, David C. "What's Negotiable? Professional Negotiations"
53 (3) 73-75 (March/April 1974)

Collective Negotiation
Labor Demands
Contracts
Teacher Associations
Employer Employee Relationship
(Negotiable Issues)
Negotiation Impasses
Boards of Education

Collective Bargaining
Contracts, Teachers see Teachers
Contracts
Teachers Contracts
Teachers Associations
Employees
School Employees
Negotiation
Teachers - Administration Disputes
Boards of Education
Professional Negotiation see
Negotiation
School Administrators and Teachers

Spodek, Bernard "The Pressure to Conform" 53 (4) 16-19
(May/June 1974)

Administrator Role
Educational Innovation
Educational Change
Principals
 Open Education
 Elementary Schools

*Principals - Difficulties
 Education Innovations see
 Innovations in Education
 Innovations in Education
 Educational Change see Change
*Change
 Elementary Schools
 Open Education see Open Plan Schools
 Open Plan Schools

Wurman, R. S. "Architect. Yellow Pages Career Library Series"
54 (2) 34-70 (November/December 1974)

Architects
Professional Occupations
Careers
Occupational Guidance
 Professional Personnel
 Career Choice
 Career Planning

*Architecture As A Profession
 Architects
 Occupations
*Occupational Information
 Careers see Occupations
 Career Education
 Occupation, Choice of

Personnel and Guidance Journal

Aanonsen, Richard G. "Guidance Public Relations via Radio and
Newspaper" 53 (5) 378-381 (January 1975)

Public Relations
News Media
Information Dissemination
Counseling Services
Student Development
 State of the Art Review
 Objectives

Public Relations
*Newspapers - Educational News
 Press Releases
 Publicity
 Counseling
 Counselors
 Student Counselors
 Education - Aims and Objectives
*Radio in School Publicity

Allen, Ray A. "Inmates Go to College" 53 (2) 146-147
(October 1974)

Correctional Rehabilitation
Rehabilitation Programs
Prisoners
Correctional Education
College Attendance
 Institutionalized (Persons)
 Recidivism

*Prison Schools
 Prisoners - Rehabilitation
 Attendance
 College Students
 Inmates, Prison see Prisoners

Bascue, Loy O. and George W. Krieger "Death As a Counseling Concern" 52 (9) 587-592 (May 1974)

Crisis Therapy	Crisis Intervention Techniques
Death	<u>see</u> Counseling-Theories and Principles
Suicide	
Rehabilitation Counseling	Counseling - Theories and Principles
Counseling Goals	*Death
Supervision	Suicide
Counselor Attitudes	Rehabilitation Counselors <u>see</u>
Counseling Services	Counselors
	*Counselors - Duties
	Student Counselors
	Supervision of Counseling Students
	<u>see</u> Counseling - Supervision
	Counseling - Supervision
	Counseling Services <u>see</u>
	Personnel Service
	Personnel Service

Benoit, Robert B. and G. Roy Mayer "Extinction: Guidelines For Its Selection and Use" 52 (5) 290-294 (January 1974)

Extinction (Psychology)	*Behavior Modification
Counselor Functions	Counselors
Behavior Change	*Conditioned Responses - Extinction
Classroom Techniques	Reinforcement (Psychology)
Conditioning	Case Studies
Reinforcement	Counseling
Case Studies	Student Counselors

Brandenberg, Judith B. "The Needs of Women Returning to School" 53 (1) 11-18 (September 1974)

Adult Students	College Students, Women
Females	*Women - Psychology
Womens Education	Personnel Services
Student Needs	
College Students	
Student Personnel Service	

Crookston, Burns B. "The Intentional Democratic Community in College Residence Halls" 52 (6) 382-389 (February 1974)

Democracy	Democracy and Education
College Students	College Students - Housing
Dormitories	*Dormitories - Administration
Community Characteristics	Models
Community Development	Educational Sociology <u>see</u>
Models	Sociology, Educational
College Housing	Sociology, Educational
Educational Sociology	Social Psychology
Social Psychology	Housing
College Environment	

Drapela, Victor J. "Counselors, Not Political Agitators"
52 (7) 449-456 (March 1974)

Counselor Role
 Political Issues
 Role Theory
 Social Problems
 American Culture
 Democracy
 Communism

Counselors
 Counseling
 Social Problems
 Communism and Education
 Democracy and Education
 Student Counselors

Loesch, Larry C. "The NNPI: In Sickness or In Health"
52 (8) 541-545 (April 1974)

Personality Tests
 Test Construction
 (No Nonsense Personality
 Inventory, NNPI)
 Evaluation

*Personality Tests
 *Tests and Scales - Construction
 Evaluation

Malcolm, David D. "The Center/Satellite Model: Grand Strategy
 For Change" 52 (5) 303-308 (January 1974)

Federal Programs
 Federal Aid
 Teacher Education
 Counselor Training
 Organizational Change
 Program Descriptions
 Guidance Programs
 Educational Finance
 Models

Federal Aid to Education
 Grants In Aid
 Teacher Education
 Counselors - Education
 Finance, School see School Finance
 School Finance
 Models
 *United States - Office of Education

Skovholt, Thomas M. and Ronald W. Hoenninger "Guided Fantasy
 in Career Counseling" 52 (10) 693-696 (June 1974)

Counseling
 Career Education
 Fantasy
 Occupational Guidance
 Vocational Counseling
 Student Personnel Services

Counseling
 Student Counselors
 Career Education
 *Fantasy
 *Occupation, Choice of
 *Vocational Guidance - Theories
 and Principles
 Student Personnel Service see
 Personnel Service
 Personnel Service

SPECIAL EDUCATION

Education and Training of the Mentally Retarded

Babington, Wallace and David L. Braddock "HEW Mental Retardation Activities and the Role of the Office of Mental Retardation Coordination" 8 (4) 230-233 (December 1973)

Exceptional Child Services	Children, Exceptional
Mentally Handicapped	Mentally Handicapped
Federal Government	*Handicapped - Laws and Legislation
Government Role	Special Education
Federal Aid	Federal Government
	Federal Aid to Education
	Office of Mental Retardation
	Coordination <u>see</u> U.S.-Office
	of Mental Retardation Coordi-
	nation
	*U.S.-Office of Mental Retardation
	Coordination

Barcott, Richard A. "Time-Telling Instruction in Special Education Classes" 8 (4) 207-211 (December 1973)

Exceptional Child Research	Children, Exceptional
Educable Mentally Handicapped	Special Education
Time	*Mentally Handicapped Children -
Programmed Instruction	Education
Evaluation	*Time - Units of Work
Mentally Handicapped	*Programmed Teaching - Special
Elementary School Students	Schools and Classes
Junior High School Students	Evaluation
Daily Living Skills	School Children
	Junior High School Students

Bellamy, G. Tom and Terry T. Bellamy "Descriptive Concepts for Preschool Retarded Children" 2 (3) 123-130 (October 1974)

Preschool Education	Preschool Education
Concept Formation	Concept Formation <u>see</u> Learning,
Teaching Methods	Psychology of - Conceptual
Exceptional Child Research	Learning
Mentally Handicapped	*Learning, Psychology of - Conceptual
Educable Mentally	Learning
Handicapped	Teaching Methods
	Children, Exceptional
	Mentally Handicapped
	*Mentally Handicapped Children -
	Education

Bricker, Diane D. "Early Intervention: Being Better Prepared
for the Special Education Classroom" 2 (1) 30-32
(February 1974)

Exceptional Child Education
Mentally Handicapped
Infancy
Early Childhood Education
Stimulation
Intervention
Parent Education

Children, Exceptional - Education
*Mentally Handicapped Children-
Education-Tennessee
Infants
Education of Children
Preschool Education
Parent Education
Special Education
Special Teachers

Cormany, Robert B. "Outdoor Education for the Retarded Child"
2 (2) 66-69 (April 1974)

Handicapped Children
Intermediate Grades
Special Education
Program Descriptions
Outdoor Education

Exceptional Child Education
Camping

Children, Exceptional
Handicapped Children see
Children, Exceptional
Intermediate Grades
Special Education
*Outdoor Education - Special Schools
and Classes
*Camping for the Handicapped

Goodstein, Henry A. "Individualizing Instruction Through Matrix
Teaching" 2 (4) 187-191 (December 1974)

Handicapped Children
Teaching Methods
(Matrix Teaching)

Exceptional Child Education
Behavioral Objectives
Curriculum Design
Individualized Instruction

Handicapped Children see
Children, Exceptional
Children, Exceptional
Teaching Methods
Special Education
Special Teachers

Behavioral Objectives see
Taxonomy of Educational
Objectives
*Taxonomy of Educational Objectives
Curriculum
*Individualized Instruction -
Special Schools and Classes

Gourley, Theodore J. Jr. "Scouting for the Retarded: A Potential
School Curriculum" 2 (4) 191-193 (December 1974)

Educable Mentally Handicapped
Adolescents
National Organizations
(Boy Scouts of America)
Exceptional Child Education
Mentally Handicapped
Males
Curriculum Guides

Mentally Handicapped
Mentally Handicapped Children
Adolescence
*Boy Scouts of America
Children, Exceptional
Boys
Curriculum

Striefel, Sebastian and Dieter Eberl "Imitation of Live and Videotaped Models" 2 (2) 83-88 (April 1974)

Mentally Handicapped

Adolescents

Imitation

Models

Video Tape Recordings

Exceptional Child Research

Institutionalized (Persons)

Behavior Patterns

Mentally Handicapped Children

*Mentally Handicapped - Behavior Adolescence

Imitation

*Learning, Psychology of - Social Learning

*Videotape Recordings - Use Children, Exceptional - Research Behavior

Thibodeau, Gerald P. "Manipulation of Numerical Presentation in Verbal Problems and Its Effect on Verbal Problem Solving Among EMH Children" 2 (1) 9-14 (February 1974)

Exceptional Child Research

Educable Mentally Handicapped

Problem Solving

Mathematics

Mentally Handicapped

Adolescents

Exceptional Children see Children, Exceptional

Children, Exceptional

Educable Mentally Retarded see

Mentally Handicapped Children

Mentally Handicapped Children

*Problem Solving

Mathematics

Adolescents, Mentally Handicapped see Mentally Handicapped

*Mentally Handicapped - Psychology

*Numbers

Verbal Learning see Learning,

Psychology of - Verbal Learning

*Learning, Psychology of - Verbal Learning

Williams, Charlotte and Kathryn Blake "Educational Materials: Special Reading Instructional Procedures for Mentally Retarded and Learning Disabled Children; Overview of Research Program Activities" 2 (3) 143-149 (October 1974)

Educable Mentally Handicapped

Learning Disabilities

Reading

Teaching Methods

Exceptional Child Research

Mentally Handicapped

Effective Teaching

Educable Mentally Retarded see

Mentally Handicapped; Mentally Handicapped Children

Mentally Handicapped

Mentally Handicapped Children

Learning Disabilities see

Children, Exceptional-Education and Learning, Psychology of -

Neurophysiological Disorders

Children, Exceptional - Education

Learning, Psychology of -

Neurophysiological Disorders

Teaching Aids and Devices

Research, Educational

Teaching Methods

Journal of Learning Disabilities

Colligan, Robert C. "Psychometric Deficits Related to Perinatal Stress" 1 (3) 154-160 (March 1974)

Exceptional Child Research
Neurologically Handicapped
Etiology
Stress Variables
(Perinatal Influences)
Minimally Brain Injured
Childhood
Prenatal Influences

Children, Exceptional
Neurologically Damaged Children
see Brain Damaged Children
Brain Damaged Children - Diagnosis
see Brain Damaged - Diagnosis
*Brain Damaged - Diagnosis
Stress
Minimal Brain Dysfunction see
Brain Damaged; Brain Damaged
Children
*Childbirth
Children
*Prenatal Influences

Forness, Steven R. "Implications of Recent Trends in Educational Labeling" 1 (7) 445-449 (August/September 1974)

Exceptional Child Education
Learning Disabilities
Childhood
Classification
Trend Analysis
Normalization (Handicapped)
Regular Class Placement
Special Education Teachers
Teacher Role
Program Development

*Children, Exceptional - Education
Learning, Psychology of -
Neurophysiological Disorders
Children
*Classification - Special Schools
and Classes
Trend Analysis
Special Teachers

Griffen, Donald C. "Saccades As Related to Reading Disorders" 1 (5) 310-316 (May 1974)

Exceptional Child Research
Reading Difficulty
Etiology
Eye Movements
Learning Disabilities
Childhood
Males
Vision

Children, Exceptional
*Reading - Difficulties
*Reading - Physiological Aspects
*Eye - Fixation
*Eye - Movements
Learning, Psychology of -
Neurophysiological Disorders
Vision see Sight
Sight

Hallenbeck, Phyllis N. "Teaching Social Studies to Special Children" 1 (1) 11-14 (January 1974)

Exceptional Child Education
Learning Difficulties
Social Studies
Teaching Methods
Special Education Teachers
Learning Disabilities

*Children, Exceptional - Education
Learning Disabilities see Learning,
Psychology of - Neurophysio-
logical Disorders
Learning, Psychology of -
Neurophysiological Disorders
Social Studies see Social Sciences
*Social Sciences - Teaching -

Hallenbeck, Phyllis N. (continued)

Special Schools and Classes
Teaching Methods
Special Education
Special Teachers

Maitland, Suzanne, et al. "Early School Screening Practices"
7 (10) 645-649 (December 1974)

Handicapped Children	Children, Exceptional
National Surveys	*Surveys - Elementary Schools
Screening Tests	*Readiness for School
School Districts	*Readiness Tests
Exceptional Child Research	Kindergarten
Early Childhood Education	Reading - Readiness
Kindergarten	Preschool Education
Student Placement	
Reading Readiness	

O'Gara, Mary Jane "The Child in the Middle" 7 (6) 353-358
(June/July 1974)

Exceptional Child Education	*Children, Exceptional - Diagnosis
Learning Disabilities	Parents of the Handicapped
Parent Role	Case Studies
Parent Associations	
Case Studies	

Perino, Joseph and Claire B. Ernhart "The Relation of Subclinical
Lead Level to Cognitive and Sensorimotor Impairment in Black
Preschoolers" 7 (10) 616-620 (December 1974)

Mentally Handicapped	Mentally Handicapped
Learning Disabilities	Learning, Psychology of -
Etiology	Neurophysiological Disorders
Lead Poisoning	*Lead Poisoning
Exceptional Child Research	Children, Exceptional
Preschool Education	Preschool Education
Negroes	*Negro Children
Cognitive Development	Cognitive Development <u>see</u> Mental
Perceptual Motor Learning	Development
	Mental Development
	Motor Development

Roger, Roger "What Does 'Mainstreaming' Mean?" 7 (8) 513-515
(October 1974)

Handicapped Children	Handicapped - Education
Regular Class Placement	Grouping, Ability <u>see</u> Ability
Normalization (Handicapped)	Grouping
Grouping (Instructional Purposes)	Ability Grouping
Exceptional Child Education	*Classification - Students - Special
Definitions	Schools and Classes
	*Children, Exceptional - Education
	Definitions
	Mentally Handicapped - Education
	Special Education

Simpson, D. Payne "Attention Training Through Breathing Control
to Modify Hyperactivity" 7 (5) 274-283 (May 1974)

Hyperactivity	*Hyperactivity
Operant Conditioning	Operant Conditioning <u>see</u>
Attention Span	Conditioned Responses
Feedback	Conditioned Responses
Training Techniques	*Attention
Exceptional Child Research	Feedback
Learning Disabilities	Special Education
Childhood	*Children, Exceptional - Behavior
Behavior Change	Learning, Psychology of -
Self Control	Neurophysiological Disorders
	*Behavior Modification
	Self Control
	Breathing <u>see</u> Respiration
	*Respiration

Word, Penny and Vitali Roznko "Behavior Therapy of an Eleven-
Year-Old Girl with Reading Problems" 7 (9) 551-554
(November 1974)

Reading Difficulty	*Reading - Difficulties
Case Studies	Case Studies
Changing Attitudes	Attitude Change
Therapy	Behavior Modification
(Desensitization)	Desensitization Theory <u>see</u>
Exceptional Child Research	Conditioned Responses-Emotional
Learning Disabilities	Responses
Behavior Change	*Conditioned Responses - Emotional
Student Attitudes	Responses
	Children, Exceptional

Teaching Exceptional Children

Boland, Sandra K. "Managing Your Instructional Material Dollar"
6 (3) 134-139 (Spring 1974)

Exceptional Child Education
 Special Education Teachers
 Instructional Materials
 Guidelines

Handicapped Children
 Program Budgeting
 Special Classes

Children, Exceptional - Education
 Special Education
 Special Teachers

*Teaching Aids and Devices -
 Selection
 Audiovisual Aids
 Handicapped - Education
 Budget, School
 Special Schools and Classes

D'Alonzo, Bruno J. "Puppets Fill the Classroom with Imagination"
6 (3) 140-144 (Spring 1974)

Exceptional Child Education
 Instructional Materials
 Class Activities
 (Puppets)

Disadvantaged Youth
 Learning Disabilities
 Language Handicapped
 Visually Handicapped
 Elementary School Students
 Self Concept

Children, Exceptional - Education
 Audiovisual Aids

Teaching Aids and Devices
 *Puppets and Puppet Plays
 Disadvantaged Youth see Culturally
 Deprived Children
 Culturally Deprived Children
 Language Development
 Visually Handicapped Children
 School Children
 Self Perception
 Imagination

*Special Education - Teaching Aids
 and Devices

Donovan, Michael E. "With Five Dollars and Enthusiasm" 6 (4)
 184-191 (Summer 1974)

Exceptional Child Education
 Vocational Education
 Business Responsibility
 Task Performance
 (School Store)

Handicapped Children
 Secondary School Students

Children, Exceptional - Education
 Vocational Education
 Special Education

Task Performance see Performance
 Evaluation

Performance Evaluation
 *Stores - High School
 School Stores see Stores
 Handicapped Children see
 Children, Exceptional
 High School Students
 Junior High School Students
 Money - Teaching

Haughton, Eric "Myriad Counter (Or, Beads That Aren't For Worrying)" 6 (4) 203-209 (Summer 1974)

Instructional Materials
Student Developed Materials
Mathematics
(Wrist Counter, Abacus)

Instructional Materials see
Teaching Aids and Devices
Teaching Aids and Devices
Mathematics
*Abacus

Kennedy, Ann "Language Awareness and the Deaf-Blind Child"
6 (2) 99-102 (Winter 1974)

Exceptional Child Education
Deaf Blind
Language Instruction
Psycholinguistics
Communication (Thought Transfer)
Multiply Handicapped
Reinforcement

Children, Exceptional - Education
Handicapped - Education
*Deaf Blind - Education
Deaf - Education
Blind - Education
*Language Development
*Psycholinguistics
Communication
Reinforcement

Murphy, Lee C. "Videotape As Motivator for Non-Hearing Students, Or Can You See Yourself on TV and Still Be Bored in School?"
7 (1) 10-14 (Fall 1974)

Deaf
Teaching Methods
Video Tape Recordings
Student Participation
Exceptional Child Education
Aurally Handicapped
Instructional Media
Skill Development
Communication Skills
Interpersonal Competence

*Deaf - Education - Teaching Aids
and Devices
Teaching Methods
Video Tape Recordings
Children, Exceptional - Education
Teaching Aids and Devices
Audiovisual Aids
Handicapped - Education
Instructional Media see Audiovisual
Aids
Skills
Communication Skills see Communica-
tion - Teaching
Communication - Teaching
*Television in Education - Special
Schools and Classes
Motivation (Psychology)
Interest

Perry, B. Fisher "The Liberation of Johnny" 6 (3) 154-161
(Spring 1974)

Exceptional Child Education
Language Handicapped *
Precision Teaching
Language Development
Speech Skills
 Learning Disabilities
 Early Childhood
 Speech Therapists

Children, Exceptional - Education
*Precision Teaching
*Language Development
*Speech Therapy - Case Studies
 Learning, Psychology of -
 Neurophysiological Disorders
Speech Therapists

Walsh, Sara R. "I'm Me!" 6 (2) 78-83 (Winter 1974)

Exceptional Child Education
Multiply Handicapped
Self Concept
Teaching Methods
 Rubella
 Deaf
(Severely Handicapped)

Children, Exceptional - Education
Handicapped
Self Concept see Self Perception
*Self Perception
Teaching Methods
*Deaf - Education

Watling, Carol and Raymond E. Hallard "The Sea Beside Us"
7 (1) 26-28 (Fall 1974)

Handicapped Children
Outdoor Education
Science Activities
Program Descriptions
 Exceptional Child Education
 Curriculum
 Teaching Methods
 Field Trips

Handicapped - Education
Children, Exceptional - Education
Outdoor Education
Science
Curriculum
Special Education
Teaching Methods
*Marine Biology - Teaching - Special
 Schools and Classes
Field Trips

Weiner, Ken "From Out of the Past -- Old Time Radio Hides Again"
6 (4) 210-213 (Summer 1974)

Exceptional Child Education
Emotionally Disturbed
Educable Mentally Handicapped
Tape Recordings
(Radio Programs)
 Mentally Handicapped
 Elementary School Students
 Secondary School Students
 Listening Comprehension
 Communication Skills

Children, Exceptional - Education
*Emotionally Disturbed Children -
 Education
Educable Mentally Handicapped see
 Mentally Handicapped; Mentally
 Handicapped Children
Mentally Handicapped Children -
 Education
Tape Recordings
*Radio Broadcasting - History
Elementary School Students see
 School Children
School Children
High School Students
Junior High School Students
Listening Comprehension see
 Comprehension in Listening
Comprehension in Listening
Communication Skills see
 Communication-Teaching
Communication - Teaching

APPENDIX 2 -- DATA USED IN COMPILING THE STRUCTURAL CHARTS

The following data is an example of the type of material which was gathered both from Education Index and the Thesaurus of Descriptors in order to compile the structural charts of the three areas - educational psychology, school administration, and special education. Space does not allow the inclusion of all of the data used.

Structure - ERIC Thesaurus

Educational Psychology

EDUCATIONAL PSYCHOLOGY

BT Foundations of Education
Psychology

RT Education
Educational Anthropology
Educational Counseling
Educational Principles
Educational Sociology
Educational Theories
Intervention

EDUCATION

UF Education Factors

NT Academic Education
Adult Education
Aerospace Education
Aesthetic Education
After School Education
Alcohol Education
Art Education
Bilingual Education
Career Education
Coeducation
Community Education
Comparative Education

EDUCATION (continued)

NT Compensatory Education
Computer Science Education
Consumer Education
Continuation Education
Correctional Education
Correspondence Study
Cultural Education
Driver Education
Drug Education
Early Childhood Education
Economic Education
Elementary Secondary Education
English Education
Environmental Education
Equal Education
Extension Education
Family Life Education
General Education
Health Education
Humanistic Education
Industrial Education
Intergroup Education
International Education
Library Education
Literacy Education
Migrant Education
Music Education
Negro Education
Nondiscriminatory Education
Nonformal Education
Open Education
Outdoor Education
Performance Based Education
Physical Education
Population Education
Post Secondary Education
Process Education
Progressive Education
Public Affairs Education
Public Education
Religious Education
Rural Education
Safety Education
Science Education
Service Education
Special Education
Study Abroad
Supplementary Education
Universal Education
Urban Education
Vocational Education
Womens Education

EDUCATION (continued)

RT Continuous Learning
Curriculum
Educational Alternatives
Educational Attitudes
Educational Background
Educational Change
Educational Complexes
Educational Counseling
Educational Demand
Educational Disadvantage
Educational Discrimination
Educational Environment
Educational Equality
Educational Equipment
Educational Experience
Educational Experiments
Educational Facilities
Educational Finance
Educational Guidance
Educational Improvement
Educational Legislation
Educationally Disadvantaged
Educational Methods
Educational Mobility
Educational Needs
Educational Objectives
Educational Opportunities
Educational Philosophy
Educational Planning
Educational Policy
Educational Practice
Educational Principles
Educational Problems
Educational Programs
Educational Psychology
Educational Quality
Educational Research
Educational Resources
Educational Responsibility
Educational Retardation
Educational Status Comparison
Educational Strategies
Educational Supply
Educational Television
Educational Testing
Educational Theories
Educational Trends
Education Service Centers
Instruction
Learning
Teaching
Training

EDUCATIONAL ANTHROPOLOGY

SN Application of anthropological concepts
and methods to the study of educational
institutions and processes

BT Anthropology
Foundations of Education

RT Comparative Education
Cross Cultural Studies
Cultural Environment
Culture
Educational History
Educational Principles
Educational Psychology
Educational Sociology
Educational Theories
Ethnology
Nonformal Education
Sociocultural Patterns

EDUCATIONAL COUNSELING

BT Counseling

RT Education
Educational Guidance
Educational Psychology
Faculty Advisors

EDUCATIONAL PRINCIPLES

BT Foundations of Education
Standards

RT Education
Educational Anthropology
Educational Psychology
Educational Research
Educational Theories
Nonformal Education

EDUCATIONAL SOCIOLOGY

- BT Foundations of Education
Sociology
- RT Cultural Factors
 - Educational Anthropology
 - Educational Psychology
 - School Community Relationship
 - Social Change
 - Social Influences
 - Social Psychology

EDUCATIONAL THEORIES

- BT Foundations of Education
Theories
- RT Audiovisual Communication
Education
 - Educational Anthropology
 - Educational History
 - Educational Objectives
 - Educational Philosophy
 - Educational Principles
 - Educational Psychology
 - Nonformal Education
 - Progressive Education

INTERVENTION

- SN Action performed to direct or
influence behavior
- UF Educational Intervention
 - Medical Intervention
 - Psychoeducational Intervention
- RT Desensitization
 - Educational Psychology
 - Educational Therapy
 - Exceptional (Atypical)
 - Helping Relationship
 - Medical Services
 - Outreach Programs
 - Psychoeducational Processes
 - Psychology
 - Special Education

LEARNING THEORIES

BT Theories

- RT Discovery Process
- Learning
- Learning Plateaus
- Learning Processes
- Mnemonics
- Paired Associate Learning
- Primacy Effect
- Reinforcement
- Rote Learning
- Serial Learning
- Stimulus Generalization

PSYCHOLOGICAL EVALUATION

NT Personality Assessment

BT Evaluation

- RT Association Tests
- Educational Diagnosis
- Personality Tests
- Projective Tests
- Psychological Services
- Psychological Testing
- Psychometrics
- School Psychologists

LEARNING PROCESSES

UP Educational Processes

Learning Cycles

- NT Behavior Chaining
- Concept Formation
- Discovery Processes
- Extinction (Psychology)
- Generalization
- Interference (Language Learning)
- Learning Activities
- Nucleation (Language Learning)
- Operant Conditioning
- Primacy Effect

BT Cognitive Processes

- RT Abstraction Levels
- Activity Learning
- Conservation (Concept)
- Contingency Management
- Continuous Learning

LEARNING PROCESSES (continued)

RT Deductive Methods
 Discovery Learning
 Experimental Colleges
 Inductive Methods
 Learning
 Learning Characteristics
 Learning Modalities
 Learning Plateaus
 Learning Specialists
 Learning Theories
 Mediation Theory
 Memory
 Nonformal Education
 Perceptual Motor Learning
 Progressive Education
 Recall (Psychological)
 Rote Learning
 Shift Studies
 Thought Processes
 Transfer of Training

COGNITIVE PROCESSES

NT Association (Psychological)
 Learning Processes
 Memory
 Perception
 Reading Processes
 Retention
 Thought Processes

RT Abstraction Levels
 Compensation (Concept)
 Comprehension
 Conceptual Tempo
 Conservation (Concept)
 Decision Making Skills
 Deductive Methods
 Identification
 Inductive Methods
 Inquiry Training
 Linguistic Competence
 Logic
 Mediation Theory
 Questioning Techniques
 Risk
 Role Models
 Sensory Deprivation

LEARNING DIFFICULTIES

UF Arithmetic Deficiencies

RT Academic Achievement
 Diagnostic Teaching
 Educational Diagnosis
 Learning
 Learning Characteristics
 Learning Disabilities
 Nonverbal Learning
 Remedial Instruction
 Symbolic Learning

PAIRED ASSOCIATE LEARNING

BT Associative Learning

RT Association (Psychological)
 Learning Theories
 Patterned Responses
 Perception
 Serial Learning

ASSOCIATIVE LEARNING

UF Word Associations (Reading)

NT Paired Associate Learning

BT Learning

RT Association (Psychology)
 Association Tests
 Aural Learning
 Behavior
 Conditioned Stimulus
 Nonverbal Learning
 Serial Learning
 Symbolic Learning
 Visual Learning
 Word Recognition

LEARNING

- UF Environmental Learning
Learning Experiments
- NT Activity Learning
Associative Learning
Aural Learning
Continuous Learning
Discovery Learning
Discrimination Learning
Incidental Learning
Intentional Learning
Multisensory Learning
Nonverbal Learning
Observational Learning
Perceptive Motor Learning
Preschool Learning
Rote Learning
Second Language Learning
Sequential Learning
Serial Learning
Symbolic Learning
Transfer of Training
Verbal Learning
Visual Learning
- RT Conditioned Response
Conditioning
Discovery Processes
Education
Inquiry Training
Instruction
Language Learning Levels
Learning Activities
Learning Characteristics
Learning Difficulties
Learning Experience
Learning Laboratories
Learning Motivation
Learning Processes
Learning Readiness
Learning Theories
Mnemonics
Nature Nurture Controversy
Recall (Psychological)
Teaching
Time Factors (Learning)

ELEMENTARY SCHOOL STUDENTS

BT Students

RT Elementary Education
Elementary Schools

VISUALIZATION

SN Act or power of forming mentally
visual images or objects not present
to the eye

BT Thought Processes

RT Memorizing
Memory
Recall (Psychological)
Retention
Transfer of Training
Visual Perception

THOUGHT PROCESSES

UF Thinking Processes

NT Abstract Reasoning
Concept Formation
Creative Thinking
Critical Thinking
Generalization
Logical Thinking
Productive Thinking
Recall (Psychological)
Visualization

RT Artificial Intelligence
Association (Psychological)
Deductive Methods
Eidetic Methods
Imagination
Inductive Methods
Intellectualization
Intelligence
Learning Processes
Logic
Mediation Theory
Surrealism
Task Analysis

SUCCESS FACTORS

- UF Success
- BT Performance Factors
- RT Achievement
Evaluation
Failure Factors

PERFORMANCE FACTORS

- NT Failure Factors
Low Achievement Factors
Success Factors
- RT Performance
Performance Criteria
Performance Specifications
Reliability

CONVERGENT THINKING

- NT Evaluative Thinking
- BT Critical Thinking
- RT Deductive Methods
Logical Thinking
Problem Solving

ACADEMIC ACHIEVEMENT

- UF Academic Performance
Academic Progress
Academic Success
Educational Achievement
Educational Attainment
Educational Level
Scholastic Achievement
Scholastic Performance
School Achievement
School Performance
Student Achievement
Student Performance
- NT Academic Failure
Student Promotion
- RT Able Students
Academic Ability
Academic Aptitude
Academic Aspiration

ACADEMIC ACHIEVEMENT (continued)

RT Academic Probation
Academic Records
Academic Standards
Achievement Rating
Advanced Placement
Degree Requirements
Educational Accountability
Educational Assessment
Gifted
Grades (Scholastic)
High Achievers
Intelligence
Learning Difficulties
Low Achievers
Performance
Performance Contracts
Progressive Retardation
Reading Achievement
Student Evaluation
Students
Superior Students
Underachievers

INTELLIGENCE QUOTIENT

BT Ratios (Mathematics)

RT Intelligence
Intelligence Level
Intelligence Tests
National Intelligence Norm

APPENDIX 3 - EDUCATIONAL PSYCHOLOGY CANDIDATE TERMS FROM
THE ERIC THESAURUS

BEHAVIORAL OBJECTIVES

SN Objectives indicating desired
changes in behavior resulting
from learning

BT Objectives

RT Affective Objectives

Behavior

Behavior Change

Behavior Patterns

Cognitive Objectives

Contingency Management

Continuous Progress Plan

Course Objectives

Educational Objectives

Performance Based Education

Performance Based Teacher Education

Process Education

Protocol Materials

Psychomotor Objectives

Student Behavior

Student Centered Curriculum

TASK ANALYSIS

BT Job Analysis

RT Behavior Problems

Complexity Level

Critical Incidents Method

Employment Qualifications

Intellectual Development

Mental Development

Occupational Information

Skill Analysis

Task Performance

Thought Processes

Work Simplification

BEHAVIOR

SN Externally apparent behavior
of the whole organism

NT Affective Behavior
Animal Behavior
Attachment Behavior
Conduct
Group Behavior
Hyperactivity
Infant Behavior
Leadership Styles
Life Style
Paranoid Behavior
Participation
Performance
Persistence
Play
Reactive Behavior
Response Style (tests)
Self Control
Social Behavior
Socially Deviant Behavior
Spontaneous Behavior
Stimulus Behavior
Student Behavior
Teacher Behavior

RT Associative Learning
Attention
Attitudes
Behavioral Counseling
Behavioral Objectives
Behavioral Sciences
Behavior Change
Behavior Development
Behavior Patterns
Behavior Problems
Behavior Rating Scales
Behavior Standards
Behavior Theories
Cheating
Conditioned Response
Conditioned Stimulus
Counseling Theories
Curiosity
Emotionally Disturbed
Human Dignity
Individual Power
Leadership
Motivation
Organizational Climate
Protocol Materials
Psychology
Psychometrics
Psychomotor Skills
Psychopathology
Self Congruence
Sleep
Sociology
Sociometric Techniques
Sportsmanship

EVALUATION

NT Achievement Rating
Administrator Evaluation
Auditory Evaluation
Counselor Evaluation
Course Evaluation
Curriculum Evaluation
Educational Assessment
Educational Status Comparison
Equipment Evaluation
Formative Evaluation
Literature Reviews
Medical Evaluation
Personnel Evaluation
Preschool Evaluation
Profile Evaluation
Program Evaluation
Property Appraisal
Psychological Evaluation
Relevance (education)
Relevance (information retrieval)
Self Evaluation
Speech Evaluation
Student Evaluation
Summative Evaluation
Test Interpretation
Textbook Evaluation

BT Measurement

RT Action Research
Biographical Inventories
Case studies (education)
Counseling Effectiveness
Educational Therapy
Evaluation Methods
Evaluation Needs
Evaluation Thinking
Expectation
Failure Factors
Inspection
Measurement Techniques
Medical Treatment
Merit Rating Programs
National Competency Tests
Observation
Participant Satisfaction
Performance Criteria
Performance Specifications
School Visitation
Scores
Success Factors
Synthesis
Testing
Test Results
Test Reviews
Tests
Validity

EDUCATIONAL DIAGNOSIS

SN Identification of the nature or
level of student ability skill

UF Diagnosis

NT Reading Diagnosis

BT Identification

RT Clinical Diagnosis
Diagnostic Teaching
Diagnostic Tests
Educational Therapy
Error Patterns
Learning Difficulties
Psychoeducational Clinics
Psychological Evaluation
Student Evaluation

REINFORCEMENT

UF Learning Reinforcement
Reinforcement Theory

NT Negative Reinforcement
Positive Reinforcement
Punishment
Reinforcers
Social Reinforcement

RT Contingency Management
Discrimination Learning
Extinction (psychology)
Feedback
Learning Theories
Locus of Control
Mnemonics
Motivation
Programmed Tutoring
Teaching Techniques
Timeout

FEEDBACK

UF Knowledge of Results

BT Cybernetics

RT Accountability
Educational Accountability
Grades (scholastic)
Information Processing
Man-Machine Systems
Programmed Instruction
Reinforcement

STIMULI

- NT Aural Stimuli
 - Conditioned Stimulus
 - Cues
 - Electrical Stimuli
 - Stimulants
 - Stimulus Devices
 - Verbal Stimuli
 - Visual Stimuli
- RT Conditioning
 - Dimensional Preference
 - Motivation
 - Psychophysiology
 - Sensory Experience
 - Stimulus Behavior
 - Stimulus Generalization

CONCEPT TEACHING

- BT Teaching
- RT Concept Formation
 - Generalization

MOTIVATION

- UF Achievement Incentives
 - Achievement Motivation
 - Incentives
 - Motivation Factors
- NT Learning Motivation
 - Low Motivation
 - Student Motivation
 - Teacher Motivation
- RT Academic Aspiration
 - Attention Control
 - Attention Span
 - Behavior
 - Bibliotherapy
 - Educational Interest
 - Morale
 - Motivation Techniques
 - Needs
 - Positive Reinforcement
 - Professional Recognition
 - Readiness (mental)
 - Reinforcement
 - Rewards
 - Self Reward
 - Social Reinforcement
 - Sportsmanship
 - Stimuli

MEMORY

BT Cognitive Processes

RT Cues

Learning Processes

Memorizing

Mnemonics

Recall (psychological)

Retention

Visualization

BIBLIOGRAPHY

1. SCHORR, ALAN "Education Index and Current Index to Journals in Education: Do We Really Need Both?" Journal of Academic Librarianship, 2 (3) 135-136 (July 1976).
2. HEISE, GEORGE F. (Associate Director of Indexing Services - H. W. Wilson Co.) Personal communication, 1978.
3. Current Index to Journals in Education. New York, Macmillan Information, 1967 -
4. HEISE, op. cit.
5. Current Index to Journals in Education, op. cit.
6. DEIGHTON, LEE C., ed. The Encyclopedia of Education. New York, Macmillan, 1971, 199.
7. HEISE, op. cit.
8. U.S. OFFICE OF EDUCATION (ERIC) Rules for Thesaurus Preparation. Rev. ed. Washington, U.S. Government Printing Office, 1969, 2-3.
9. Ibid., 7.
10. Ibid., 12.
11. BARHYDT, GORDON C., et al. Information Retrieval Thesaurus of Education Terms. Cleveland, Case Western Reserve University Press, 1968, 2.
12. UNESCO:IBE The Unesco:IBE Education Thesaurus. 1st ed. Paris-Geneva, 1973, 5.
13. BARHYDT, et al., 19.
14. UNESCO:IBE, 16.
15. Ibid., 14.
16. BARHYDT, et al., 12.
17. UNESCO:IBE, 13.
18. BRITISH STANDARDS INSTITUTION Draft Standard Guidelines for the Establishment and Development of Monolingual Thesauri. Doc. No. 78/61428 DC London, 1978.
(Technical Committee DOS/10 - Thesauri and Indexing